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VOL. I.—30TH YEAR. SYDNEY, SATURDAY, APRIL 17, 1943. No. 16.

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BACILLARY DYSENTERY CAUSED BY BACTERIUM DYSENTERIÆ P274.

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Major, Australian Army Medical Corps,

AND

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Major, Australian Army Medical Corps.

(From an Australian General Hospital.)

THIS paper describes the clinical and pathological features of an outbreak of bacillary dysentery caused by the organism *Bacterium dysenteriæ* P274 of Boyd.[1][2] It is considered that this outbreak provides additional evidence of the pathogenicity of this organism.

Boyd, working in army laboratories in India, investigated the organisms found in 7,339 cultures from the stools of dysentery patients, and in 1940 he was able to revise the classification of the mannite-fermenting dysentery organisms. He restricted the term Flexner to those organisms which possessed, in addition to a specific type antigen, a common group antigen. Of the other dysentery bacilli which gave Flexner biochemical reactions, but did not possess the Flexner group antigen, three, originally termed types 170, P288 and D1, were accepted as true dysentery organisms and named Boyd I, II and III. These organisms possess no group antigen in common, although each has a specific type antigen.

Three other Flexner-like organisms were isolated, types P274, D19 and P143. Of the first, with which we are particularly concerned at present, Boyd[3] made the following statement:

P274 has certain characteristics which favour its acceptance as a dysentery bacillus, but on the other hand it has a group relationship with *B. alkalescens*, Aoki's type VII, and certain gas-forming strains which are probably non-dysenteric. It had better, therefore, remain sub judice until further evidence is forthcoming.

It is the purpose of this paper to provide such further evidence as is necessary for the acceptance of P274 as a true dysentery organism.

Epidemiology.

The cases of dysentery outlined below were treated at an Australian general hospital during the months of July, August, September and October, 1942, at a station in north central Queensland. Most of the cases occurred in units in close proximity to the hospital. The weather was hot, the daily temperature rising from an average of about 80° F. in July to 100° F. in October. Flies were fairly common throughout that period.

Clinical Features.

The clinical manifestations were identical with those of the less serious cases of bacillary dysentery seen in the Middle East by the writers of this paper. Without laboratory aid it was impossible to state in a particular case whether the causal organism was *Bacterium dysenteriæ* P274 or some other dysentery bacillus.

There were no deaths in this series, nor was it considered necessary to place the name of any sufferer on the "seriously ill" list. Cases could be conveniently divided into three groups—mild, moderate and severe—which merged into one another.

The moderate type was commonest and accordingly is first described. The initial complaint was colicky lower abdominal pain, followed shortly afterwards by frequent bowel actions; the stools contained mucus, which was sometimes blood-stained. The temperature rose to about

100° F., but the patient did not appear very ill. After treatment for twenty-four hours the temperature usually fell to normal, and apart from the presence of diarrhœa the patient felt well. Subsequently he was afebrile, and a gradual decrease in the number of motions and an improvement in their character took place. Unless he had a relapse (and this occasionally happened), the patient was discharged from hospital about four weeks after the onset (see Case I).

In the more severe type of infection the onset was sudden, and there was considerable constitutional disturbance. Shivering occurred and was followed by fever, vomiting, frontal headache, pain in the loins and limbs, and intestinal colic. The temperature reached 104° F., and pronounced tenderness was present in both iliac fossæ, usually predominating on the left side, but sometimes on the right. The motions were frequent (fifteen or more in twenty-four hours), and the stools were variable in character. Early in the disease blood-stained mucus threads were mixed with liquid fæcal material. Subsequently the motions consisted entirely of blood and mucus, but sometimes mucopus was also present. Later, fæcal material returned and the blood and mucus gradually disappeared. As a rule the general symptoms subsided within the first forty-eight hours of treatment and the stools returned to normal number and appearance in ten to fourteen days. Unless a relapse occurred the patient was usually ready to leave hospital after twenty-eight days (see Case II).

The mild type of infection was characterized by diarrhœa without much constitutional disturbance. Lower abdominal pain was sometimes present. The temperature was normal throughout the course of the illness, and physical examination revealed no abnormality apart from slight to moderate tenderness in the left iliac fossa on the first and occasionally on the second day of the disease. The stool consisted of liquid fæces with mucus which was occasionally blood-stained. Recovery was usually rapid, but the patient was kept in hospital for about three weeks to eliminate the risks of relapse and of infection of contacts (see Case III).

Reports of Cases.

The following are illustrative cases.

CASE I.—Private J.P., aged twenty-four years, was admitted to hospital on September 4, 1942, for the investigation of chronic backache. Eight days later he complained of colicky lower abdominal pain, vomiting and severe frontal headache. Soon diarrhœa commenced, and during the next sixteen hours he passed six liquid stools containing mucus. Microscopic examination of the mucus revealed a typical bacillary exudate, and *Bacterium dysenteriæ* P274 was isolated on culture. On the first day of the bowel disturbance the patient's temperature was 100·6° F., his pulse rate was 98 per minute and his respirations numbered 20 per minute. The tongue was coated by a moist white fur, and moderate tenderness was present on both sides of the lower part of the abdomen. Physical examination otherwise revealed no abnormality. The patient was given the routine graduated dietetic and sodium sulphate treatment.

During the next five days the number of motions was respectively six, five, five, six and four, the stools consisting of liquid fæces with flakes of mucus. Gradual improvement took place, and after the first day the patient's temperature was normal. Sigmoidoscopic examinations on the twelfth and on the nineteenth days revealed congestion of the mucous membrane of the lower part of the bowel, but on the twenty-sixth day the appearance of the mucosa had returned to normal. The patient was discharged from hospital on the thirtieth day.

CASE II.—Corporal D.B., aged twenty-nine years, was admitted to the dysentery ward on October 8, 1942, with a history of having suffered from diarrhœa for three days. The onset of the illness was heralded by moderately severe lower abdominal pain. Diarrhœa commenced about five hours later, and although he did not "report sick", he had five or six bowel actions daily for the next three days. On the second day he was nauseated and vomited twice. Anorexia was present until his admission to hospital.

On admission, he complained of severe abdominal pain, which was temporarily relieved when his bowels acted. There was no tenesmus. He was somewhat dehydrated, having tried to control the diarrhœa by starving himself of both fluids and food. On his admission to hospital the temperature was 103° F., his pulse rate was 108 per minute, and his respirations numbered 22 per minute. His tongue was coated and rather dry, and lower abdominal tenderness was present, especially in the left iliac fossa. The routine sodium sulphate and graduated dietetic treatment was inaugurated. During the first and second days after his admission to hospital he had ten and eleven bowel actions respectively; the stools consisted of fluid fæces with flecks of mucus. Microscopic examination of the mucus revealed an indefinite exudate, with a moderate bacterial content. *Bacterium dysenteriæ* P274 was isolated on culture.

On the third day after his admission the number of bowel actions had diminished to four; slight abdominal pain was still present, but the patient was hungry and felt much better. On the fourth day he passed a liquid fæcal stool streaked with blood-stained mucus. From then on there was steady improvement, and the number of bowel actions fell to one or two per day, the stools being normal. On the fourteenth day of treatment sigmoidoscopic examination of the lower part of the bowel revealed the mucous membrane to be moderately congested and slightly swollen; but no mucus or mucopus was present. Recovery was uninterrupted, and sigmoidoscopic examination on the twenty-first day of treatment revealed normal mucous membrane.

CASE III.—Private G.R.G., aged forty-two years, was admitted to hospital on July 27, 1942, complaining of diarrhœa present for the previous two days. On the day before his admission he passed ten motions, but neither blood nor mucus was observed in the stools. Mild aching pain was present in both iliac fossæ and in the left lumbosacral region. He neither vomited nor felt feverish during the illness.

On his admission to hospital, his temperature was 98·4° F., his pulse rate was 72 per minute, and his respirations numbered 20 per minute. The tongue was clean and there were no abnormal physical signs apart from an easily palpable right kidney. The stool consisted of liquid fæces with flecks of mucus. Microscopic examination of the mucus revealed an indefinite exudate, and on culture *Bacterium dysenteriæ* P274 was isolated. The routine sodium sulphate and graduated dietetic treatment was given. The number of stools gradually diminished to one per day on the ninth day of the disease. On the sixteenth day, however, the patient suffered a mild relapse. A slow recovery followed, and he was discharged from hospital on the forty-fourth day. Throughout the course of the illness the temperature and pulse rate were not elevated.

Laboratory Investigations.

Technique.

The procedure followed in the isolation of the causative organisms was exactly the same as that described by Hone, Keogh and Andrew.[1] For the benefit of workers who may not have access to this paper, the mode of investigation will be briefly outlined.

As soon as a stool was passed, trained orderlies selected a representative portion from it, always including mucus and blood if these were present. This specimen was immediately forwarded to the laboratory and there dealt with promptly, so that it was the rule for samples of the stool to be plated out within ten minutes of its passage.

A small piece of mucus was removed from the sample with a hooked platinum wire, washed in sterile saline solution until free from fæcal material, and inoculated on a single four-inch MacConkey plate, which was incubated overnight. Next morning suspicious colonies were picked off and subcultured on agar slopes, and by the afternoon growth was sufficiently advanced for the performance of slide agglutination tests against polyvalent serum of the Flexner and Boyd types and the Shiga, Sonne and Schmitz types of serum. If the organism was inagglutinable with serum of these types, it was inoculated in lactose, mannitol and glucose peptone water, and examined next morning. If a non-lactose-fermenting organism fermented mannitol and glucose without the production of gas, it was tested by slide agglutination against P274 and D19 types of serum. The last-mentioned types of serum were among those obtained by Keogh from Colonel Boyd in Cairo in 1941. When it became apparent that the common infections in

this area were caused by Flexner and P274 organisms, the latter was included in the first slide agglutination test.

As soon as a piece of mucus had been cultured, it was examined microscopically, and the result was recorded in the standard army terms of "typical bacillary exudate", "indefinite exudate", and "no exudate". The first term was restricted to mucus in which 90% of the cells, apart from erythrocytes, were polymorphonuclear leucocytes; any exudate in which epithelial cells and macrophage cells were more prominent was classified as "indefinite".

Results.

In the period under review stools from 228 patients suspected of having bacillary dysentery were examined, and dysentery organisms were isolated from 85, as follows: *Bacterium dysenteriæ* Flexner, 39 (type II 15, type V 16, type VI eight); *Bacterium dysenteriæ* P274, 42; *Bacterium dysenteriæ* Boyd 1, one; *Bacterium dysenteriæ* Sonne, two; *Bacterium dysenteriæ* Schmitz, one.

The laboratory findings in cases in which P274 was the causative organism are collected in Table I.

Bacterium dysenteriæ P274 was not isolated from any patient not suffering from clinical dysentery, and has not been reported to occur in normal stools in the numerous examinations made in Australia, India, the Middle East and elsewhere.

Bacterium alkalescens is agglutinated by P274 serum to its full titre (Boyd[3]). However, it usually ferments dulcite and produces an initial and lasting alkalinity in litmus milk (Topley and Wilson[4]). The organism isolated from the stools of these dysentery patients varied in its action on dulcite, usually causing late fermentation. In litmus milk it produced a slight acidity for the first few days, the reaction reverting to neutrality after about fourteen days' incubation.

Agglutination Tests with Patient's Serum.

Living and formolized suspensions of three agglutinable strains of *Bacterium dysenteriæ* P274 were used, and tube agglutination tests were carried out upon serum from ten subjects with no past history of diarrhœa or dysentery, and from ten patients suffering from P274 dysentery. Specimens of serum were examined at the following intervals after the onset of the disease: from two patients, three weeks; from six patients, four weeks; from one patient, eight weeks; and from one patient, fifteen weeks. In no case, either among the patients or among the controls, was there any agglutination at any of the serum dilutions tested—that is, from 1/10 to 1/640.

Discussion.

From Table I it can be seen that *Bacterium dysenteriæ* P274 was isolated in large numbers in cases of clinical bacillary dysentery when the stools examined consisted of mucopus with blood, in smaller numbers when the stools contained an exudate described as indefinite, and not at all when the stools contained neither mucus nor exudate.

Thus P274 is an organism morphologically and biochemically indistinguishable from *Bacterium dysenteriæ* Flexner; it is isolated in large numbers early in cases of clinical dysentery, and it has not been found in normal stools. It has also proved to be the most common of the four organisms isolated in cases of dysentery occurring endemically in a camp area in north central Queensland.

This evidence is sufficient, in the opinion of the writers, to prove P274 a true dysentery bacillus. The fact that no agglutinins were demonstrated in the serum of a few patients at varying intervals after the acute dysenteric attack cannot be regarded as evidence against this view. The development of agglutinins following a short attack of acute bacillary dysentery is often absent and more frequently transient. At the time when the data for this communication were being assembled the epidemic had practically subsided, and it was not possible to examine specimens of serum for agglutinins at intervals during the attack and during convalescence.

Following the suggestion of Major-General H. Marrian Perry[5] that pathogenic organisms which have Flexner biochemical reactions but do not possess the Flexner group antigen should be named *Bacterium dysenteriæ* Boyd, we suggest that P274 should be called *Bacterium dysenteriæ* Boyd IV.

TABLE I.

Case Number.	Day of Disease.	Number of Stools in Previous 24 Hours.	Macroscopic Appearance of Stool.	Microscopic Appearance of Stool.	Growth of P274.
I	1	5	Liquid with blood and mucus.	Bacillary exudate.	Moderate.
II	2	12	Liquid, no mucus.	Indefinite exudate.	Scanty.
III	3	?	Liquid with blood and mucus.	Bacillary exudate.	Profuse.
IV	1	?	Liquid with mucus.	Indefinite exudate.	Scanty.
V	1	10	Liquid with mucus.	Indefinite exudate.	Scanty.
VI	2	4	Liquid with blood and mucus.	Bacillary exudate.	Moderate.
VII	3	0	Liquid with mucus.	Indefinite exudate.	Scanty.
VIII	3	3	Liquid with mucus.	Bacillary exudate.	Moderate.
IX	3	3	Liquid with blood and mucus.	Bacillary exudate.	Moderate.
X	2	10	Liquid with blood and mucus.	Bacillary exudate.	Profuse.
XI	7	2	Liquid with mucus.	Indefinite exudate.	Scanty.
XII	3	1	Liquid with mucus.	Indefinite exudate.	Moderate.
XIII	1	16	Liquid with blood and mucus.	Bacillary exudate.	Profuse.
XIV	1	15	Liquid with blood and mucus.	Bacillary exudate.	Profuse.
XV	2	?	Liquid with mucus.	Bacillary exudate.	Moderate.
XVI	2	4	Liquid with mucus.	Bacillary exudate.	Scanty.
XVII	3	8	Soft with mucus.	Indefinite exudate.	Scanty.
XVIII	2	3	Liquid with mucus.	Bacillary exudate.	Profuse.
XIX	1	10	Liquid with blood and mucus.	Bacillary exudate.	Profuse.
XX	2	1	Soft with surface mucus.	Indefinite exudate.	Scanty.
XXI	5	11	Liquid with mucus.	Indefinite exudate.	Scanty.
XXII	1	?	Liquid with blood and mucus.	Bacillary exudate.	Profuse.
XXIII	1	?	Liquid with blood and mucus.	Bacillary exudate.	Moderate.
XXIV	4	2	Liquid with mucus.	Indefinite exudate.	Scanty.
XXV	6	3	Liquid with blood and mucus.	Indefinite exudate.	Scanty.
XXVI	1	4	Liquid with mucus.	Indefinite exudate.	Moderate.
XXVII	1	6	Liquid with blood and mucus.	Bacillary exudate.	Moderate.
XXVIII	1	7	Liquid with mucus.	Bacillary exudate.	Moderate.
XXIX	1	5	Liquid with blood and mucus.	Bacillary exudate.	Moderate.
XXX	4	8	Liquid with mucus.	Indefinite exudate.	Scanty.
XXXI	2	10	Liquid with blood and mucus.	Bacillary exudate.	Moderate.
XXXII	2	6	Liquid with mucus.	Bacillary exudate.	Moderate.
XXXIII	1	12	Liquid with blood and mucus.	Bacillary exudate.	Profuse.
XXXIV	2	10	Liquid with blood and mucus.	Bacillary exudate.	Moderate.
XXXV	3	3	Liquid with blood and mucus.	Indefinite exudate.	Scanty.
XXXVI	1	8	Liquid with blood and mucus.	Bacillary exudate.	Profuse.
XXXVII	7	3	Liquid with mucus.	Indefinite exudate.	Scanty.
XXXVIII	1	6	Liquid with blood and mucus.	Bacillary exudate.	Profuse.
XXXIX	1	4	Liquid with blood and mucus.	Bacillary exudate.	Profuse.
XL	4	12	Liquid with mucus.	Indefinite exudate.	Scanty.
XLI	1	6	Liquid with blood and mucus.	Indefinite exudate.	Scanty.
XLII	1	4	Liquid with blood and mucus.	Bacillary exudate.	Profuse.

As will be seen from the case reports, the clinical picture of acute dysentery caused by this organism can in no way be differentiated from dysentery due to *Bacterium dysenteriæ* Flexner.

No investigation of the antigenic constitution of P274 was possible in this hospital, but this is being carried out by Dr. F. T. Wheatland, of the Commonwealth Serum Laboratories, and the results will be published separately at a later date.

Bacterium dysenteriæ P274 has previously been reported from India[1] (75 of 7,339 positive cultures at army laboratories from 1932 to 1935) and from the Middle East[2] (two of 101 typed strains at Kantara). Investigations of the extent of its occurrence in Australia and New Guinea are being carried out.

Summary.

1. Forty-two cases of dysentery attributed to *Bacterium dysenteriæ* P274 have been investigated.

2. The clinical picture of the disease is indistinguishable from that of acute bacillary dysentery due to *Bacterium dysenteriæ* Flexner.

3. The organism P274, of previously unproved pathogenicity, has here satisfied the criteria necessary to secure its acceptance as a true dysentery bacillus.

4. It is suggested that the organism should be named "*Bacterium dysenteriæ* Boyd IV".

Acknowledgements.

The authors are indebted to Lieutenant-Colonel Ian Wood for suggestions and advice in the preparation of this paper. Major-General S. R. Burston, Director-General of Medical Services, has kindly given permission for publication.

Addendum.

Since the submission of this paper for publication, a letter was received from Colonel J. S. K. Boyd,[6] Director of Pathology, Middle East Forces, from which the following sentences are quoted: "Strain P274 has proved quite common here in Middle East, in fact it is the most common of the 'newer' dysentery bacilli. There is no doubt that as a result of our experience here it will need to be given a place on the list."

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(4) W. W. C. Topley and G. S. Wilson: "The Principles of Bacteriology and Immunity", 1929.
(5) P. H. Marrian Perry: In discussion following Boyd, reference 2.
(6) J. S. K. Boyd: Personal communication, November 26, 1942.

BACILLARY DYSENTERY: SOME RESULTS AND CONCLUSIONS FROM A SERIES OF PATIENTS TREATED WITH SULPHAGUANIDINE.

By Robert F. West,
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A survey was made of patients suffering from "diarrhœa" admitted to hospital over a period of three months, from March 1 to May 30, 1942. The survey was conducted for the following reasons: (i) the relatively large number of cases of patients admitted to hospital with the diagnosis of diarrhœa; (ii) the high proportion of specific bacillary infection; (iii) the impression gained from the discussion on bacillary dysentery and its treatment at the Middle East Conference of Physicians, held at Cairo in February, 1942, that, though it was admitted that sulphaguanidine treatment was good and a definite advance, there was no statistical evidence based on a minute study of the disease from every aspect during its course, and controlled by a series of cases treated by previous methods, to show why sulphaguanidine therapy was better than other methods of treatment.

All patients with diarrhœa were admitted to a special department of the hospital and there segregated, in the following categories: (i) non-specific enteritis, including gastro-enteritis; (ii) specific bacillary infections, (*a*) acute, (*b*) chronic; (iii) amœbic dysentery.

Of these groups, bacillary dysentery in the acute phase was studied from the following aspects: (*a*) symptomatology, (*b*) diagnosis, (*c*) treatment with sulphaguanidine (with a small control series of patients treated by saline therapy method), (*d*) complications of the disease, (*e*) complications due to the therapeutic agent.

Management.

The ward was sufficiently large to allow for expansion so as to avoid placing patients in other wards. It was separate from the rest of the hospital and self-contained as regards its personnel and its food preparation room. It had a fly-proof pan room, fly-proof latrines and showers, and it was situated near to the laboratory.

The ward held 40 beds, and the staff consisted of one nursing sister, one nursing orderly and one general duties orderly by day, and one nursing orderly and one general duties orderly (with the regular, periodic visits of the nursing sister) by night. When a patient was admitted he was put to bed and told to use the bed-pan until further orders, and not to micturate into the pan (this is most important from the point of view of bacteriological examination). He was told to tell the orderly when he had used the pan for the first time. This first specimen was taken to the laboratory immediately. He was also told to keep a tally of the number of bowel actions from midnight to midnight (this being a convenient twenty-four hour period). Each day, one stool from each patient was examined by the medical officer and its constituents were noted; this is a necessary check on the progress of the condition.

Diagnosis.

For the actual diagnosis there are three stages: (i) the history and macroscopic examination of the stools; (ii) microscopic and bacteriological examination; (iii) sigmoidoscopic examination.

History and Macroscopic Examination of Stools.

The onset is abrupt, central abdominal pain being the chief feature, though in a few cases of the present series malaise was present for a few hours prior to the onset of pain. Desire to defæcate sometimes comes on immediately, but more often it occurs half an hour to six hours after the onset of pain; this is followed by frequent passage of small, loose stools accompanied by griping pain of more or less severe character occurring in the central abdominal region and passing to the left iliac fossa. In all cases of Shiga type and in some of Flexner type, pain was also experienced in the right iliac fossa. This, I think, is an important symptom indicative of a more widely spread involvement of the mucosa and hence a more severe type of disease.

A feeling of coldness, sometimes actual shivering, occurred in over half the cases, but there was no true rigor—an important point in the differential diagnosis.

Vomiting is an unusual symptom and never occurred at the onset; but in the Shiga type it occurred at the end of the first day and on the second day of the illness. However, it was not persistent, although in three severe cases of Shiga type anorexia and nausea persisted for seven days.

On examination, the tongue is usually found to be dry and is always white or brown furred. The abdomen is soft, though in a few severe infections some rigidity of the left lower quadrant of the abdominal wall was felt. Tenderness is always present over the sigmoid; some-

times this tenderness extends across the centre of the abdomen and even into the right iliac fossa.

Pyrexia is common, the temperature varying from 99° to 103° F., but the initial rise of temperature is no indication of the severity of the disease, although its persistence for several days after the commencement of treatment is important.

The macroscopic examination of the stool in a suspected case is the most important single point in the physical examination, and in the absence of sigmoidoscopy the diagnosis can be made in this way in more than 90% of cases. I shall go further than this and state that in 90% of cases one can tell from the appearance of the stool the type of infecting organism.

The characteristic appearance of the stool is of a fluid stool containing more or less blood-stained mucus. In many cases there is an entire absence of fæces, the stool consisting of albuminous mucoid material and little blood, or in cases of Shiga type, the larger amount of blood is characteristic.

One condition is apt to cause confusion, and that is an acute non-specific enteritis occurring in a man with internal hæmorrhoids. In this case the blood is darker and appears in the bed pan as a circumscribed mass with no mucus.

Microscopic and Bacteriological Examination.

I shall not go into the technicalities of the laboratory investigation, except to state that in my opinion, after the second day of the disease, a typical bacillary exudate is not common. Usually the pathologist reports an indefinite exudate. Cultures were attempted from only one specimen from each patient, and of 97 cases, the organism was isolated in 48%.

Sigmoidoscopic Examination.

Sigmoidoscopic examination is not important in the early stages of acute cases, in which the history and the results of macroscopic examination of the stools are in themselves sufficient for diagnosis; but in chronic bacillary dysentery it is, I consider, the only means of diagnosis, and essential. It is also the only method of making a diagnosis in mild or otherwise doubtful cases. For example: a man complains of mild diarrhœa, perhaps having had from five to eight bowel actions *per diem* for several days, and he has not noticed whether he has passed blood and mucus. Examination of the stools usually reveals a fluid, fæcal stool with minute mucous seeds. Symptomatic treatment with *Tinctura Opii* usually alleviates the symptoms, and the disorder may be classified as diarrhœa. Sigmoidoscopic examination will, however, reveal a greater or lesser degree of definite ulceration—that is, bacillary dysentery; if this is undiagnosed (and so untreated) the condition will most certainly relapse and pass on to the stage of chronic bacillary dysentery. The importance of sigmoidoscopy in such cases cannot be stressed too strongly, because, not only does such a man remain a continuous source of infection and a menace, but it is extremely likely that his own prognosis is made very much worse.

In regard to the role of sigmoidoscopy during treatment, it may be stated that in the present series of cases sigmoidoscopic examination was carried out every third day; this was done to watch the progress of the pathological condition and to note the effects of treatment. From my observations, I consider that during sulphaguanidine therapy, the times at which sigmoidoscopic examinations should be made are the seventh and eleventh days. The reason for this will be apparent later.

I shall not discuss the sigmoidoscopic appearance of the mucosa in the acute stage or during the actual healing, except to state that in all the present cases the rectum was involved, and the more severe the infection, the more intense the ulceration and the more diffuse the involvement of the lower valve of Houston and of the ampulla of the rectum. This fact is important when we come to discuss treatment, because in the present method of administration of sulphaguanidine by mouth, I think that the stool is apt to pass from the sigmoid rapidly through the rectum, so that at no time is there a sufficient concentration of sulphaguanidine in this part. The result is that the ulcerative process is arrested relatively slowly, and not only is the rectum the last part to heal, but the danger that a chronic condition will supervene in this area is greatly increased.

Treatment.

The control series of patients were treated with sodium sulphate, two drachms as the initial dose and thereafter one drachm every four hours for forty-eight hours; the dosage was then reduced and diet gradually increased. That is to say, the treatment was the usual previous method, or rather one of these methods. At the conference of physicians it was suggested that not only was sodium sulphate no good in the treatment of bacillary dysentery, but in some cases it was harmful even to the degree of being dangerous. Despite this, sodium sulphate is still in fairly general use.

The standard dose of sulphaguanidine was 0·05 gramme per kilogram of body weight. A double dose was given as the initial dose and thereafter 0·05 gramme was given every four hours with a reduction to every eight hours when this was considered wise. This was maintained for a period of eight to ten days, depending on the sigmoidoscopic appearances. In several instances of severe ulceration, it was continued for fourteen days.

These patients were started off with a diet of clear fluids, and the diet was increased as their condition improved. With this form of treatment the diet can be increased much more quickly than with other methods.

For pain, and when there were frequent evacuations, ten minims of *Tinctura Opii* were given every four hours. This serves the double purpose of relieving pain and diminishing peristalsis, permitting of a higher local concentration of sulphaguanidine.

Results.

Among 279 cases of diarrhœa admitted to hospital over the three-month period, there were 167 (60%) of acute bacillary dysentery, 12 (4%) of amœbic dysentery and 100 (36%) of non-specific enteritis. Of the 167 patients suffering from bacillary dysentery, limitation of bed space allowed us to give complete treatment to only 97. The remainder were treated for periods of twenty-four to seventy-two hours, and when their general condition had improved they were evacuated to a base hospital to continue their treatment.

Attempts at culture were made with one specimen of fæces from each patient, and out of a total of 97 such attempts the organism was isolated in 46 (48%). The types of organism isolated were as follows:

Flexner I	29
Flexner II	4
Shiga	5
Schmitz	5
Sonne	2
Unnamed	1

The form set out below is a reproduction of a form that was filled in for each case. There was a temperature chart on the back. The form allows for a thirty-one days' record.

Table I represents the information gained from cases in both the sulphaguanidine therapy series and the control series. Only a few cases from each series are here represented; but the average for all cases treated is given in the appropriate column. From these results, the following are a few outstanding points:

1. Patients treated with sulphaguanidine after twenty-four hours showed a pronounced improvement in their general condition, and on the third day their feeling of well-being was remarkable; this is in sharp contradistinction to those receiving saline therapy, who even at the end of seven days and sometimes well into the second week experienced abdominal discomfort, anorexia and malaise.

Final Diagnosis_____ Date_____

Regt. No._____ Name_____ Unit_____

Locality _____

PREVIOUS HISTORY _____

PRESENT HISTORY_____

No. days' Diarrhoea_____

No. Stools per day_____

Pain _____

General Condition _____

Microscopic _____

Culture_____

Day.	No. of Stools.	Macroscopic Appearance.	Sigmoidoscopy.	Treatment.	Diet.
1.					
2.					
3.					
4.					
5.					

(The above ruling is continued to allow 31 days' record.)

2. The day on which the stools first became normal were for saline therapy the fifteenth day and for sulphaguanidine therapy the seventh day. The day on which sigmoidoscopic appearances became normal were, for saline therapy the twentieth day and for sulphaguanidine therapy the twelfth day. Thus the period of stay in hospital for patients treated with sulphaguanidine was twelve days, as against twenty-one days for patients receiving saline therapy. This is a most important factor from the military aspect.

Three patients originally included in the saline therapy group had a recrudescence between the seventh and eleventh days, associated with pyrexia, abdominal pain, and frequent loose stools containing blood and mucus. They were immediately given sulphaguanidine treatment, and despite the fact that the disease had then been present for ten to fourteen days, all had normal mucosa after ten days' treatment with sulphaguanidine.

Four other patients in the saline therapy group at the end of twenty-eight to thirty days' treatment still had mucus in their stools and presented abnormal appearances to sigmoidoscopic examination. Unfortunately, owing to the unit's being moved, these patients had to be passed on to another hospital and, despite everything, were lost sight of.

Complications.

In the control series (23 cases) there were no complications; but admittedly it was a small number of cases.

In our sulphaguanidine treatment series (74 cases) there were six cases of arthritis. In all cases this was monarticular and occurred only in a joint previously damaged—for example, in a knee from which the medial meniscus had been removed, or in an ankle which had been the site of a Pott's fracture. The arthritis developed about the eighth day and the average duration was four days.

The most severe complications were those due to the actual therapeutic agent employed, and were as follows.

1. Constipation was the commonest. It occurred in 15% of cases to such a degree as to cause anxiety; it also occurred in a high percentage of cases to a lesser degree, but I cannot give a definite explanation of the cause. It it important that it should be treated immediately.

2. Headache and dizziness as toxic symptoms occurred in 4% of the cases.

3. Pyrexia, occurring from the seventh to tenth day, was the result of a large dosage and subsided when sulphaguanidine therapy was stopped. This is, perhaps, the only contraindication for persistence in the use of the drug; at the first rise in temperature, either the dosage should be decreased or the interval of administration increased.

4. A morbilliform rash was another toxic manifestation in 4% of the cases.

5. Conjunctivitis occurred in 2% of cases.

Conclusions.

1. Early diagnosis is important, and in most cases it can be made from the history and from macroscopic examination of the stools.

2. Laboratory methods are a help, but are not necessary for diagnosis.

3. In all doubtful cases, sigmoidoscopic examination is essential.

4. In view of the fact that the older methods of treatment are so unsatisfactory and unreliable, and that sulphaguanidine therapy is so uniformly good, sulphaguanidine should be used in all cases, whether mild or severe.

TABLE I.

Case Number.	Type of Organism.	Number of Days Ill.	Bowel Actions *per Diem*.	General Condition.	Day of Disease on which Treatment Began.	Number of Days' Treatment.	Day on which Blood Disappeared from Stools.	Day Stool First Normal.	Day Sigmoid Appearances Normal.	Total Days Ill.	Total Days in Hospital.
Sulphaguanidine Therapy:											
V	Flex (I).	2	30	T.97 Toxic.	3	11	4	11	12	15	13
LXXII	Shiga.	5	20	T.100 Toxic.	6	14	5	13	16	21	16
XLVIII	Flex (II).	2	20	T.99 Good.	3	8	3	7	8	11	9
LXXVIII	Schmitz.	2	15	T.100 Toxic.	4	9	3	5	9	12	10
Average of 74 cases	—	2·9	16·0	—	4·5	9·7	4·5	8·5	11·4	15·4	11·7
Saline Therapy:											
XXI	Flex (I).	5	7	T.99 Good.	5	15	3	20	19	27	22
XXII	Flex (I).	1	20	T.100 Toxic.	2	18	7	22	18	24	23
XC	Flex (I).	1	20	T.100 Toxic.	1	18	4	21	22	23	22
XCII	Flex (I).	4	25	T.98 Good.	4	18	4	5	21	26	22
Average of 23 cases	—	2·5	13·5	—	3·2	17·1	4·5	15·2	19·2	23·0	20·5

5. Because patients suffering from acute bacillary dysentery travel badly, sulphaguanidine treatment should be commenced at the furthest point forward on the line of evacuation, where patients can be held for twenty-four hours or more.

6. Owing to the nature of the disease and its tendency to chronicity, the treatment should be controlled, not only by daily examination of stools, but by periodic sigmoidoscopic examination.

7. The criterion of cure is a normal mucous membrane, and no patient should be discharged as cured unless the mucosa is sigmoidoscopically normal, no matter for how many days the stools have appeared normal.

Reports of Cases.

AGRANULOCYTOSIS FOLLOWING SULPHAPYRIDINE THERAPY.

By B. A. BAKER,
Captain, Australian Army Medical Corps,
AND
FRANK FENNER,
Major, Australian Army Medical Corps.

(From an Australian General Hospital.)

AGRANULOCYTOSIS is a well-recognized complication of sulphonamide therapy, but its exact pathogenesis is not yet properly understood. The brief account of a case of neutropenia following the sulphapyridine treatment of primary bronchopneumonia, with records of blood and bone-marrow examinations made throughout the disease, may therefore be of interest.

Clinical Record.

Lance-Corporal A.A.L., aged twenty-nine years, was admitted to an Australian general hospital in Queensland on August 25, 1942. He had previously been under treatment for bronchopneumonia for ten days in a casualty clearing station. Two days before his admission to the hospital he had developed a morbilliform rash, and he was evacuated from the casualty clearing station with a diagnosis of bronchopneumonia and measles. Records of sulphonamide therapy in the first week of his illness were not complete; but he had apparently been given an initial dose of two grammes of sulphapyridine, followed by one gramme every four hours for four days, the total dosage being about 25 grammes.

On his admission to hospital his temperature was 99·6° F., his pulse rate was 100 per minute, and his respirations numbered 24 per minute. No rash was present, but there was clinical evidence of bronchopneumonia which presumably had relapsed. His general condition gave no cause for concern, and it was thought that the morbilliform rash which had appeared two days before might have been a sulphapyridine rash rather than true measles.

The subsequent course of his illness is indicated in Figure I. On the evening of the first day in hospital his temperature rose to 103° F. Oral therapy with sulphapyridine was commenced, five grammes being given twice a day. After he had taken ten grammes of sulphapyridine the patient complained of a period of discomfort, during which he felt as though he were pulsating all over his body. The next day he had a fainting attack, which consisted of dyspnœa of sudden onset, tachycardia and irregularity of the pulse. This lasted for about fifteen minutes, and recovery was rapid and complete. At this stage of the illness he showed definite symptoms of sulphonamide toxæmia; cyanosis, nausea and anorexia were prominent. The morning dose of sulphapyridine was omitted, and the administration of fluids was pushed to the limits of tolerance. Examination of the chest that evening (the thirteenth days of the disease) still revealed signs of extensive patchy consolidation. Five grammes of sulphapyridine were given and the dose was repeated next day. The reaction to the drug was so severe that its administration was suspended for twenty-four hours. The plasma sulphapyridine concentration was 4·5 milligrammes *per centum*.

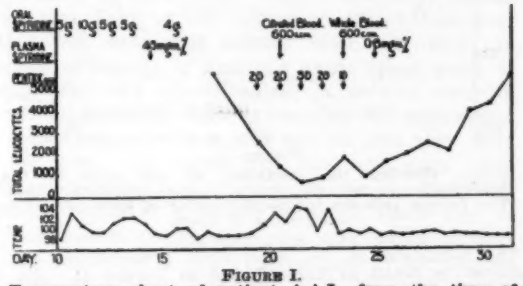

FIGURE I.
Temperature chart of patient A.A.L. from the time of his admission to hospital until his recovery from agranulocytosis. The total leucocyte count, plasma sulphonamide estimations and various forms of therapy are indicated.

Cyanosis persisted, and there were signs of patchy consolidation. Oxygen was given for twenty minutes every two hours in an attempt to determine whether the cyanosis was due to simple imperfect oxygenation of the blood or to the presence of methæmoglobin. No change in depth of cyanosis was observed at any time during the ten hours of oxygen therapy.

Bilateral subconjunctival hæmorrhage developed on the evening of the fifteenth day. A further four grammes of sulphapyridine were given the next morning; but as it was then obvious that the toxic effects of the sulphapyridine exceeded the therapeutic effect, its administration was discontinued. A leucocyte count was carried out; the leucocytes numbered 5,800 per cubic millimetre, 80% being polymorphonuclear neutrophile cells.

Two days later the total number of leucocytes had fallen to 2,500 per cubic millimetre, 53% being polymorphonuclear

TABLE I.
Detailed Figures (per Cubic Millimetre of Blood) of the Leucocytes in the Circulating Blood.

Day of Disease.	Total Leucocytes.	Polymorphonuclear Cells.	Lymphocytes.	Monocytes.	Eosinophile Cells.	Basophile Cells.	Myelobiasts.	Premyelocytes.	Neutrophile Myelocytes.
18	5,800	4,640	580	580	—	—	—	—	—
20	2,500	1,330	30	350	—	—	—	—	—
21	1,400	740	530	130	—	—	—	—	—
22	620	2,150	290	60	—	—	—	—	10
23	820	160	450	210	—	—	5	—	10
24	1,700	390	700	100	—	—	100	140	270
25	920	200	400	140	—	10	10	40	120
26	1,600	260	880	140	—	—	15	15	300
27	2,000	540	680	380	—	70	40	70	220
28	2,500	700	1,000	300	—	50	40	75	375
29	2,100	800	670	270	—	—	10	30	700
30	4,000	1,920	1,040	400	—	60	—	60	520
31	4,400	2,330	1,400	400	—	40	—	80	130
32	5,700	3,800	1,210	340	—	70	—	70	170
33	7,700	5,540	1,620	460	—	35	—	—	80
34	9,800	7,060	1,860	600	—	50	—	—	100
36	9,000	6,840	1,440	540	—	90	—	—	90
43	7,200	5,400	1,220	430	35	35	—	—	35

cells. The subsequent behaviour of the circulating leucocytes can be followed in Table I and in Figures I and II.

On the twentieth day of the disease, as soon as the neutropenia was recognized, "Pentide" therapy was instituted, and 100 cubic centimetres were given by intramuscular injection in the next five days. The injections were followed by severe pyrexial reactions. A transfusion of one pint of citrated blood was given on the twenty-first day; and one pint of the whole blood was given by the direct method (Julian Smith technique) on the twenty-fourth day. The number of leucocytes remained low for another two days, and then began to rise, at first slowly and then abruptly, until a normal figure was reached on the thirty-third day.

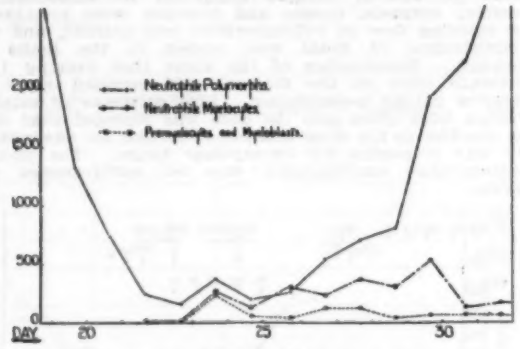

FIGURE II.

Graph showing the behaviour of the cells of the neutrophile granulocyte series in the peripheral blood. The figures indicate the total number of cells per cubic millimetre of blood.

The behaviour of the neutrophile granulocytes can be followed in detail in Table I and in Figure II. On the twenty-third day, when the number of granulocytes in the peripheral blood was at its lowest (160 neutrophile cells per cubic millimetre), neutrophile myelocytes appeared in small numbers. Later, myeloblasts and premyelocytes were found in moderate numbers in the peripheral blood.

Studies of sternal marrow obtained by aspiration were made on the twenty-third and thirty-third days of the disease. Cell counts on the marrow smears are set out in Table II.

TABLE II.

Cell Counts of Sternal Marrow Smears on the Twenty-third and Thirty-third Days of Illness. Marrow Obtained by Aspiration.

Type of Cells.	Day of Disease.		Normal Range.
	23	33	
Neutrophile polymorphonuclear cells	0·8%	48·0%	7·0%–25·0%
Neutrophile band forms	2·0%	13·0%	15·0%–35·0%
Neutrophile metamyelocytes	0·8%	7·2%	1·0%–10·0%
Neutrophile myelocytes	2·4%	9·6%	0%–10·0%
Basophile polymorphonuclear cells	0·0%	0·8%	—
Basophile metamyelocytes	0·0%	0·8%	—
Eosinophile polymorphonuclear cells	0·0%	0·6%	—
Premyelocytes	7·2%	1·0%	0·0%–10·0%
Myeloblasts	2·4%	0·4%	0·0%– 2·0%
Lymphocytes	31·2%	9·0%	4·0%–16·0%
Monocytes	2·4%	1·0%	0·0%– 5·0%
Normoblasts	27·6%	3·4%	2·0%–10·0%
Pronormoblasts	15·2%	4·6%	2·0%–15·0%
Erythroblasts	8·0%	1·0%	0·0%– 5·8%
Ratio of granulocytes to nucleated red cells	0·26	9·0	2·0– 9·0

It can be seen that cells of the myeloid series had almost disappeared from the marrow at the time of the first puncture, the bone marrow picture being one of profound hypoplasia and not of maturation arrest, which has been described in some cases of agranulocytosis. The second marrow cell count, performed when the white cells of the circulating blood had almost returned to normal, showed a reactionary hyperplasia of the myeloid cells.

Eosinophile cells were not seen in the blood until the forty-third day, when recovery was complete. Basophile granulocytes, on the other hand, persisted throughout, even in the stage of profound depression of the marrow.

The number of platelets was never reduced; it was normal in all the blood films examined.

Early in the disease there was a moderate degree of anæmia; the red blood cells on the eighteenth day numbered 3,500,000 per cubic millimetre and the hæmoglobin value was 13 grammes per 100 cubic centimetres. When the blood was investigated again after the patient's recovery from agranulocytosis the red cell picture was normal.

Some conjunctival icterus was evident a few days after the subconjunctival hæmorrhages occurred. Fouchet's test was carried out on several occasions, but always gave negative results.

Summary of Case.

In a case of primary bronchopneumonia a total amount of about fifty grammes of sulphapyridine was given in interrupted dosage over a period of fifteen days. During the treatment signs of drug intolerance were numerous, the most prominent being cyanosis, pyrexia, nausea, fainting attacks and perhaps a morbilliform rash. In the six days following the cessation of sulphapyridine therapy the number of leucocytes dropped from 5,800 per cubic millimetre to 620 per cubic millimetre. After two blood transfusions and 100 cubic centimetres of "Pentide" had been given, the number of white cells gradually rose again to normal. Examination of the sternal marrow suggested that the marrow defect was of the hypoplastic rather than the maturation arrest type.

Comment.

This case illustrates a point which has been emphasized by previous writers on sulphonamide poisoning—namely, that patients suffering from coccal infection whose response to therapy is atypical should be suspected of bone marrow damage.

The degree to which the number of leucocytes continued to fall long after the cessation of administration of the drug suggests the importance of examining early and thoroughly the blood of these patients whose response is atypical.

The outstanding clinical impression during the phase of agranulocytosis was the absence of untoward symptoms. The toxic manifestations had subsided with the cessation of the sulphapyridine treatment on the sixteenth day, and apart from weakness the patient felt very well.

Summary.

1. A case of agranulocoytosis following the administration of about fifty grammes of sulphapyridine over a period of fifteen days is described.

2. Detailed blood and bone marrow examinations were carried out at all stages of the illness. They suggested that the defect was a hypoplasia of the marrow rather than an interference with the maturation of the myeloid cells.

Acknowledgement.

Major-General S. R. Burston, Director-General of Medical Services, has kindly given us permission to publish this paper.

Notes on Books, Current Journals and New Appliances.

A RÉSUMÉ OF KNOWLEDGE ON VITAMINS.

THE passage of time has made necessary the publication of a second edition of "Vitamins in Medical Practice: A Survey of Present-Day Knowledge". This brochure is published by Roche Products Limited. The first edition was described in this journal as a scholarly *résumé* and the same remark holds good of the second edition. New material has been added. There is a survey of the vitamin *B* complex and fuller details are given of the therapeutic uses of vitamins B_1 and *C*, of lactoflavin and nicotinic acid. New material has been added in regard to vitamin *E* and a new chapter is devoted to vitamin *K*. While it is a pity that the bibliography has been omitted, the omission was unavoidable because it is now so large as to be unwieldy. This second edition is as welcome as it is useful.

The Medical Journal of Australia

SATURDAY, APRIL 17, 1943.

All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given without abbreviation: Initials of author, surname of author, full title of article, name of journal, volume, full date (month, day and year), number of the first page of the article. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

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THE AGED AND THEIR DISEASES.

WITH the passage of the years and the acquisition of fresh knowledge of disease as it affects different organs of the human body, different groups of persons or man in his several age periods, it is perhaps inevitable that new words shall be coined for the different groups of diseases or the diseases of each period. The medical practitioners who devote special time and study to these diseases and their treatment generally become dignified or try to dignify themselves with a title to denote their specialty. We recognize, for example, urology and cardiology, pædiatrics and gynæcology; and most of us talk about urologists, cardiologists, pædiatricians and gynæcologists. Specialization in medicine comes by a process of evolution and is dependent chiefly on the growth of knowledge. While all students of medicine will agree that specialization is desirable and that devotion to the investigation of special groups of diseases has been of benefit to man, there will be few, if any, who will not consent to the view that the creation of new specialties should be resisted until it can be shown that close adherence to them is likely to benefit the sick or is demanded because of intricacy of detail in newly acquired knowledge. During recent years much attention has been paid to disease as it affects old people and the study of the diseases of old age has been called geriatrics. Geriatrics is a new word—it does not appear in the "Oxford Dictionary" and "Webster" does not mention it. Malford W. Thewlis tells us that it was coined by I. L. Nascher in 1909.[1] It is really rather a jolly little word and sounds as though it referred to a schoolboy let loose on a holiday. It would hold no terrors for an elderly person who chanced to find that he or she was suffering from an ailment belonging to such a category. The word comes from the Greek γέρων, an old man, and we can at least be glad that Nascher knew some Greek; otherwise he might have turned to Latin and have devised some such atrocity as senexology. But if geriatrics is rather a pleasant word, the same cannot be said of "geriatrician", a word used by Thewlis for the specialist in geriatrics. Lovers of elegant words may perhaps be forgiven if they wonder what liberties are likely to be taken in the future with the English language by those who create new specialties in medicine. Several periods in human life still remain to have a specialty built around them. In another fifty years (who knows?) the disorders of puberty may attract such attention that both "pubertics" and "puberticians" will figure in clinical medicine; and medicine may some day boast not only of "menopausology", but also of its "menopausologists".

Readers of this journal are well aware of the altered age distribution that has taken place in the community during recent years. This altered distribution has been mentioned in connexion with the falling birth rate and the lengthening expectation of life, and the phenomenon is world wide in its occurrence. Figures obtained from the "Official Year Book of the Commonwealth of Australia" for 1940 will make the position clear. In 1871 the percentage of persons in Australia under fifteen years of age was 42·09, and the percentage of persons sixty-five years of age and over was 1·74; in 1921 the percentages were respectively 31·71 and 4·43 and in 1933 they were 27·48 and 6·48. No census has been held since 1933. Clearly the number of old persons in the community is increasing. Thewlis, it should be noted, states that in 1940 there were in the United States nine million persons over sixty-five years of age. The increase in the number of old persons in the community is in no small degree due to the achievements of preventive medicine. If therefore medicine has prolonged the life of the people, it must see that they are kept as far as possible free from disease, or, disease having attacked them, that treatment suited to their condition and environment is available to them. Old people are, generally speaking, exposed to much the same types of infection as other people, though to some of these infections they may be more susceptible than those of a younger generation. On the other hand there are certain pathological conditions to which in the nature of things old people are particularly liable—conditions in which degeneration is a prominent feature. Degeneration may be premature and it may not. And this brings us to the question of prevention. When a clinician thinks of any one of his patients in terms of preventive medicine, it is essential that he should not lose sight of the patient's general make-up and of his family history. In dealing with an older person this may easily be forgotten, as may also the patient's habits of life, acquired maybe during many years of knocking about the world. Greater discretion must be shown with the old than with the young. While a clinician may, for example, be perfectly justified in certain circumstances in cutting off supplies of alcohol and tobacco from a young man, he would be wise to hesitate and to be cautious in any prohibitions affecting the alcohol and tobacco of an old man who had been used to them for many years. Prevention of disease in old age is really the same as prevention in any age. To live in healthy surroundings, to be careful of personal hygiene, to stick to a balanced diet, to work hard but not too hard, to play with zest, to train the mind to think—these bear fruit in old age. When disease threatens an old person the measures to be taken

[1] *The Journal of the American Medical Association*, November 7, 1942.

may differ considerably from those that would be adopted with one not so old. They will be different with almost every patient, and no attempt need be made to discuss them. Thewlis describes "preclinical medicine" in relation to geriatrics and also preventive geriatrics, but this distinction would appear to be quite unnecessary—there is no need to make the subject appear difficult.

It is in the matter of treatment that most may be said from the "geriatric" point of view. It is here also that Thewlis is at his best. He sums the question up well. He thinks that no specialty in medicine can be approached as easily as geriatrics and adds that to be successful, the geriatrician (we prefer to call him the clinician) must be genuinely interested in the elderly and willing to study his patients thoroughly. He must resist "the temptation to restore the old to a state normal to maturity". Over-enthusiastic treatment must be avoided, and the elderly must "function at their own level". A great deal of this is only common sense—the common-sense clinician, if he is not familiar with the injunction that new wine must not be put into old bottles, knows that he is courting disaster if he tries to make an old man or woman function at a level younger, or shall we say lower, than that to which he or she belongs. Success will never be possible for a medical practitioner unless he has some understanding of his patient's mind; and the greater his understanding, the more nearly complete is his success likely to be. As man's age advances his body becomes less active and he relies more and more on the storehouse of his mind; medical attendants of the ageing therefore find that they have to pay increasing attention to the patient's mind, its calibre and the range of its activities. Alexis Carrel in "Man, the Unknown" points out that:

> The growth of personality involves a constant trimming of ourself. At the beginning of life, man is endowed with vast potentialities. He is limited in his development only by the extensible frontiers of his ancestral predispositions. But at each instance he has to make a choice. And each choice throws into nothingness one of his potentialities. He has of necessity to select one of the several roads open to the wanderings of his existence, to the exclusion of all others. Thus, he deprives himself of seeing the countries wherein he could have travelled along the other roads. In our infancy we carry within ourselves numerous virtuous beings, who die one by one. In our old age, we are surrounded by an escort of those we could have been, of all our aborted potentialities.

While full mental vigour lasts potentialities remain, and these will be recognized by the patient's doctor. In the end, if the patient lives long enough, he comes to the end of his "strange eventful history" and passes to "second childishness and mere oblivion".

From the present discussion we may conclude that the medical care of old people is a vast subject. Though a great deal more might be written about it than has been attempted at present, we may also conclude that the principles which should govern the treatment of old men and women when they are ill, are the same as those that operate in clinical medicine applied to persons of any age. In view of the growing number of old people in the community, in view of the pathological conditions which are a special menace to them, and in view of the diminished resistance that they can offer to the onset of disease, it is probably justifiable to agree that the diseases of old age should be regarded as worthy of special study. Whether this sphere of study is known as geriatrics will not matter much. If adoption of the name will lead to intensive study it may be accepted. But let the matter end there. Let us not countenance the "geriatrician". The family doctor is quite equal to the task of shepherding the old people of his practice through their illnesses. He knows the family, and as a general rule he will have an opportunity of finding for the elderly a niche of usefulness in the household and of encouraging a mental outlook that will be a shield and buckler when illness comes. A consulting "geriatrician" may have the dignity of a specialist, but he will have none of the advantages of the family doctor.

Current Comment.

CARCINOMA OF THE ŒSOPHAGUS.

DURING the course of a year 1,600 persons die of carcinoma of the œsophagus in England and Wales alone. Untreated, this disease has a mortality of 100%. The mortality is due to the position of the carcinoma rather than to any tendency to spread widely; at autopsy the majority of carcinomata of the œsophagus do not show any evidence of widespread metastasis. The first patient to be treated successfully by operation was described by Torek in 1913. The œsophagus was approached by the left transthoracic route and the patient lived for thirteen years in what was regarded as comfort and died without recurrence. It was not until 1933 that another instance of success was recorded, this time by Grey Turner. Eggers in America, King in Australia and Tudor Edwards and others in Britain have all recorded successful operations. The first surgeon to claim a series of successes was Garlock; six of his patients survived operation. Since treatment by operation is so dangerous, various forms of irradiation have been tried, combined with gastrostomy; but these procedures, according to R. H. Franklin,[1] do little to slow down the course of the disease.

Franklin records the histories of two patients from whom the thoracic portion of the œsophagus was completely removed for carcinoma. One of these was alive and well at the time of publication of Franklin's article; the other survived sixteen months. His method, after performing a preliminary gastrostomy, was to approach the œsophagus from the right side of the thorax. He states that X-ray examination has been found extremely reliable in distinguishing carcinoma of the thoracic œsophagus from other causes of dysphagia, and he is opposed to the use of œsophagoscopy as a routine measure, as it may make the patient less able to withstand the ordeals to follow. On the other hand, X-ray examination is not so reliable above the thoracic inlet; the diagnosis of carcinoma of the cervical portion of the œsophagus should always be confirmed by œsophagoscopy.

P. R. Allison describes the surgical treatment of four patients with carcinoma of the œsophagus.[2] Three of these were treated by excision of the thoracic portion of the œsophagus and one by excision of the stomach and abdominal part of the œsophagus. All survived operation, but none lived longer than a year. The technique used is described in detail, and the author emphasizes the usefulness of preliminary mobilization of the œsophagus from the neck. In Allison's opinion the approach to growths of the middle third of the œsophagus should be through the right pleural cavity, but for the lower third the left side of the chest affords better access.

In the same issue of the journal R. C. Brock describes a successful cardio-œsophageal resection for tumour of the cardia. The tumour was a large myoma, with secondary chronic peptic ulceration on its surface, situated at the cardio-œsophageal junction, which was treated by one-

[1] *The British Journal of Surgery*, October, 1942.
[2] *Ibidem.*

stage resection through a combined anterior abdominothoracic incision. A temporary gastrostomy was used after the operation and continuity was restored by direct œsophago-gastrostomy. The patient is said to have made a complete recovery: the anastomosis functioned well. The author states that this is the first successful œsophagogastrostomy reported from Europe. Operations such as these are among the marvels of modern surgery, and show how perfect anæsthesia has become. But it must never be forgotten that the patient at the best leads a crippled and painful existence.

THE ACCESSORY PHRENIC NERVE.

THE contribution of the fifth cervical to the phrenic often passes down as an independent nerve, either alone or combined with the nerve to the subclavius muscle, and has been termed the accessory phrenic nerve. The occurrence and relations of this nerve have been studied in the Department of Anatomy of the University Medical College, Mysore.[1] Different authorities give divergent figures for the percentage occurrence, from 30% to 80%; in this investigation the percentage was 70%. This accessory phrenic has relations with the vessels of the neck which are entirely different from those of the main phrenic nerve and these can be of some importance when surgical procedures are adopted in collapse therapy of a lung in tuberculosis. The results of this investigation confirm certain findings made by others, particularly that the accessory phrenic may not pass in front of the subclavian vein, the normal happening, but actually pierce the wall of this vein; further the nerve to the subclavius muscle may arise from the main phrenic and not from the upper trunk of the brachial plexus, in which case it hooks round the transverse scapular vessels before it enters the subclavius muscle. Original findings claimed in this research are, firstly, that the accessory phrenic after passing in front of the subclavian vein hooks round the internal mammary artery or internal mammary vein or both before joining up with the main phrenic; secondly, that instead of passing in front of the subclavian vein it is found behind it and forms a loop round the internal mammary vessels; thirdly, that the accessory phrenic joins the main phrenic not in the root of the neck but high up in the subclavian triangle; and fourthly, that the accessory phrenic may give off some branches to the inferior cervical ganglion. The authors of this research stress the importance of these variations and suggest that this nerve be looked for, and, if found, sectioned in collapse therapy, partly to render the diaphragmatic paralysis complete and partly to avoid breaking the delicate walls of fair-sized veins when avulsion of the phrenic is attempted.

THE USE OF HEPARIN WITH SCLEROSING FLUIDS.

THE aggravation of varicose veins by army service has considerably increased the number of patients with this disability. The value of the method of ligation and retrograde injection of sclerosing fluids into the saphenous veins has been borne out by the satisfactory results obtained in men exposed to rigorous conditions. Although the treatment of varicose veins has been discussed in these columns during the past twelve months and needs no elaboration here, this subject is again mentioned because of the appearance of a paper by S. H. Sedwitz[2] recommending that the use of heparin be combined with the method of ligation and retrograde injection. At first sight this would appear to be irrational and to defeat the object of the operation, which is to cause widespread thrombosis throughout the superficial system of veins.

The most frequent complications after the retrograde injection of sclerosing fluids into varicose veins are pain and œdema, which develop along the course of the veins. Sedwitz had the opportunity of examining the veins of a patient who was accidentally killed sixteen hours after the operation. The long saphenous veins were found to be sclerosed almost to the ankle with firm clot. In addition, the communicating branches above and below the knee also showed some chemical phlebitis and a small amount of clot adherent to the intima but not completely sclerosing the vessel. Sedwitz suggested that the spread of the thrombus to the deeper veins, with impairment of the circulation in them, was responsible for the pain and œdema so frequently seen after this operation. It was for this reason that this author suggested that heparin be injected twenty-four hours after the operation to stop any further spread of the thrombus. Thus the use of heparin in these patients is not contradictory as might appear. Against the use of this procedure there is, however, the high cost of the heparin even if its use should be confined to the patients who have definite swelling, pain, discoloration, and impaired circulation in the leg.

Pulmonary embolism, while a rare complication of operation on varicose veins, probably occurs more frequently after this than after most other operations; and for this reason early ambulatory treatment of these patients has been advised. Although this drug was suggested by Sedwitz for a different reason, heparin should, or at least would be expected to, decrease further the incidence of pulmonary embolism in these patients; and thus we have an additional reason for its use in the treatment of varicose veins.

CIGARETTE SMOKING, NICOTINE AND BREAST MILK.

IN the opening sentence of a report on the excretion of nicotine in breast milk and its effect on lactation and the nursling, H. H. Perlman and A. M. Dannenberg state that there has during the last decade been a startling increase in the number of cigarettes smoked in the United States.[1] In 1931 the number smoked was 113,500,000,000; in 1941 it was 189,769,000,000. This total includes cigarettes smoked by both men and women. There is, of course, no way of finding out how many of these cigarettes are smoked by women, though cigarette vendors report, and it is patent to everybody, that the number has increased enormously in recent years. Perlman and Dannenberg carried out an investigation of 55 white *primiparæ* and *multiparæ* who were addicted to smoking cigarettes. The finding by Hatcher and Crosby that nicotine suppresses lactation was not confirmed. Perlman and Dannenberg gathered the impression that the number of mothers who smoked cigarettes and who failed to nurse their infants successfully was no greater than among the non-smoking group at the hospital. A correlation was found to exist between the quantity of nicotine excreted in the milk and urine and the number of cigarettes smoked. The amount of nicotine in the milk was found to range from 0·116 to 0·5 milligramme per litre, depending on the number of cigarettes smoked. The quantity of nicotine that will produce symptoms in an infant is not known. One observer found that he had symptoms after an intake of 1·0 to 4·0 milligrammes. A comparable intake for an infant six to seven pounds in weight would be 0·05 to 0·2 milligramme. Some of the infants investigated would therefore have to drink a litre of their mother's milk before they manifested symptoms. The infants actually appeared to be unaffected. It is thought that the infants, like their smoking mothers, may develop a tolerance to the drug. W. B. Thompson in the discussion sensibly remarked that though the milk of a smoking woman may not do obvious damage, it certainly cannot be proved to be beneficial. For most persons interested in the subject that observation should be sufficient.

[1] Y. Appajee and M. J. Rajanna: "On the So-Called Accessory Phrenic Nerve", *The Half-Yearly Journal of the Mysore University*, Section B, Number I, September, 1942, page 39.
[2] *American Heart Journal*, December, 1942.

[1] *The Journal of the American Medical Association*, November 28, 1942.

Abstracts from Medical Literature.

PATHOLOGY.

Metastatic Tumours of the Brain.

Joseph H. Globus and Theodore Meltzer (*Archives of Neurology and Psychiatry*, August, 1942) have analysed the clinical manifestations and the anatomical observations in 57 cases of metastatic tumour of the brain. With regard to the anatomical features they are summarized as follows. In the larger number of cases (30 out of 57) multiple tumours, variable in size and distribution, were revealed, whilst in a somewhat smaller group (20) the metastatic lesion was single and massive. Finally, there was a third, very small, group, constituting five of the total number, characterized by diffuse, microscopic infiltrations. The great majority of the tumours in this series were observed in the brain substance. Only in one case was the lesion restricted to the dura and in one case to the leptomeninges. In 49 of the 57 cases the metastatic lesion was in the nature of a carcinoma, leaving only eight cases to be distributed among tumours of other types—the Grawitz tumour (two cases) and neuroblastoma, lymphosarcoma, spindle cell sarcoma, melanosarcoma, chorionepithelioma and Ewing's sarcoma (one case each). In the 33 cases of carcinoma in which complete autopsy was performed, the following distribution of the primary lesion was noted: lungs, 19 cases; thyreoid, 4; rectum, 3; sigmoid, 2; stomach, 1; adrenal glands, 1; kidneys, 1; prostate, 1; unknown, 1. In addition there were three cases in which complete autopsy was not done, but in which an operative procedure indicated clearly the seat of the primary lesion. In one case it was a carcinoma in the breast, in another a pigmented mole in the left leg and in still another a small melanotic tumour in the skin of the right foot. In the small group of cases of a tumour other than carcinoma the primary sites were as follows: adrenal two cases, Grawitz tumour; left femur one case, Ewing's tumour; bladder (urinary) one case, chorionepithelioma; skin (neck) one case, melanosarcoma. In all the cases in which full post-mortem examination was made metastasis to the brain was found to be but an expression of a generalized process of dissemination, as other viscera were coincident sites of the metastases. The lungs, when not the primary seat of the malignant growth, were spared recognizable metastatic lesions in only six cases. Of 23 cases in which autopsy was restricted to the brain, X-ray studies suggested the presence of metastases in the lungs in seven cases. The material presents strong evidence that the metastatic cells are brought to the brain by the blood stream and no evidence of transportation of neoplastic cells to the brain by true lymphatics. The growth of a metastatic tumour in the brain takes place at the expense of adjacent brain tissue. Its extension is by way of the perivascular spaces and probably also by actual transportation of small cell groups through the vascular channels. In spite of its invasive character, a discrete line of demarcation between the metastatic tumour and the adjacent tissue was maintained, and only mild reactive changes, such as a narrow zone of condensation, gliosis and occasional lymphocytic infiltration in nearby brain tissue, were present. In rare instances a narrow belt of hæmorrhage was observed, and this was particularly true of metastases from the so-called Grawitz type of tumour, or hypernephroma. Relatively wide areas of œdema of surrounding brain tissue were common. The tumour tissue itself was usually rich in blood vessels, occasionally showed extravasation, but most frequently contained relatively large areas of necrobiosis. A fairly large number of such tumours contained cysts filled with gelatinous material. In a small group of cases of metastatic invasion of the brain the lesions were widespread in distribution, but were restricted to infiltrations about blood vessels. These lesions were recognized only microscopically and are occasionally described as miliary carcinomata. The chorioid plexus, which the authors studied with a view to determining its role in the transportation of tumour cells to the nervous system, was the seat of metastatic invasion in only 1 of 57 cases.

A. B. Baker (*Archives of Pathology*, September, 1942) reports an even larger series of metastatic tumours of the brain. In his 114 cases the location of the primary tumour was as follows. There were 24 primary neoplasms in the lung; in the breast, 24; the skin, 9; kidney, 9; adrenal body, 6; colon, 6; stomach, 4; pancreas, 4; testis, 3; and the uterus, 5. There were two each in the urinary bladder and the rectum and also the eye. There was one each in the liver, thyreoid gland, bone, antrum, prostate, gum, œsophagus, turbinate bone, tonsil and ovary, and four were undetermined. He gives a report on the clinical and histological details of the metastases. His findings, however, do not essentially differ from those of Globus and Meltzer.

Clinical Significance of the Pathological Changes in Giant Follicular Lymphadenopathy.

The comparatively newly discovered disease known as giant follicular lymphadenopathy has received widespread recognition by pathologists. It is, according to Douglas Symmers (*Archives of Pathology*, August, 1942), beginning to attract the attention of clinicians, among whom, however, it is almost always mistaken for Hodgkin's disease. Clinically, the two diseases bear a strong resemblance to each other. Both are primarily diseases of the lymphoid system. Both are characterized by generalized, occasionally by localized, enlargement of the superficial lymph nodes and not uncommonly by splenomegaly. Histologically, the changes in the lymph nodes and the spleen are so widely divergent that confusion between the two diseases is scarcely possible. In Hodgkin's disease the histological picture is complex. The first observable change is to be found in hyperplasia of the lymph follicles. These rapidly disappear and are replaced by diffuse hyperplasia of lymphocytes, distributed among which are variable numbers of large mononuclear cells together with multinuclear cells which are not to be distinguished from the megakaryocytes of the bone marrow. Eosinophile cells and eosinophilic myelocytes may or may not be present. At a later stage the lymphoid tissues are apt to show different degrees of connective tissue overgrowth. In a single node or even in several nodes the process may go on spontaneously to partial or almost complete replacement by dense, hyalinized bands or patches of connective tissue, which may obscure the earlier changes in such fashion as to render diagnosis difficult. In giant follicular lymphadenopathy, on the contrary, the histological changes are comparatively simple, consisting of numerical and dimensional hyperplasia of the lymph follicles. Cytologically, in many instances the follicles are distinguishable only with difficulty from those found in lymph nodes showing the familiar hyperplasia which occurs in association with innumerable inflammatory lesions and not uncommonly with neoplasms, both benign and malignant. At other times all the follicles in giant follicular lymphadenopathy are made up of essentially the same sorts of embryonal cells, that is to say, cells with very large hypochromatic or almost achromatic nuclei and sharply defined, often indented nuclear membranes, the so-called shadow cells, and similar but slightly smaller cells which are somewhat richer in chromatin and the nuclear membrane of which is also indented in such fashion as to give the nuclei curious shapes. The latter cells are believed to be transitional forms between the very large shadow cells and the still smaller, richly chromatic cells of the large lymphocytic type with no detectable limiting membrane and irregular, sometimes angulated nuclei. These cells of several types often lie in a film-like syncytium and may be present in widely varying numbers. In certain instances the peripheral zone of small lymphocytes is lacking. In still others the follicles may be made up practically exclusively of small lymphocytes. As long as these hyperplastic and variously modified collections of cells remain localized within the lymph follicles, the disease falls under the heading of giant follicular lymphadenopathy, but when the follicles rupture and the cells escape into the surrounding tissues of the lymph node, the disease giant follicular lymphadenopathy is transformed directly into polymorphous cell sarcoma. Giant follicular lymphadenopathy, in its earlier stages at least, is naturally inclined in the direction of benignancy, and spontaneous diminution in the size of the nodes or apparently complete disappearance may occur. Sometimes this may happen even late in its course. Recurrence, however, is not uncommon in either circumstance. In these respects Hodgkin's disease and giant follicular lymphadenopathy again resemble one another clinically. However, in the matter of radiation therapy giant follicular lymphadenopathy presents a noteworthy deviation from Hodgkin's disease in that it is susceptible of rapid alleviation if not cure, provided radiation is given at proper intervals and in appropriately small doses. Indeed, in giant follicular lymphadenopathy the quick response of the lymph nodes to mild X-ray therapy is so impressive that if at a later date recurrence is noted and readjustment of the enlarged

nodes is delayed or incomplete or both, and larger doses are required, the clinician would seem to be justified in suspecting that the condition is undergoing some form of mutation.

Recklinghausen's Disease with Unusual Symptoms from Intestinal Neurofibroma.

IT is, according to John Grill and Joseph F. Kuzma (*Archives of Pathology*, November, 1942), evident from a study of the literature that non-cancerous tumour of the small intestine is quite uncommon and, furthermore, that it is extremely rare to find a patient with neurofibromata of the small bowel (exclusive of the duodenum) presenting serious clinical symptoms. The case reported is that of a woman, aged sixty years, who had peripheral cutaneous neurofibromata of Recklinghausen's disease and associated abnormalities. The chief complaints were caused by massive intermittent gastro-intestinal bleeding from a very large vascular tumour of the ileum, diagnosed as neurofibroma. The patient also presented three other conditions, namely, a familial-hereditary tendency (four sisters and one brother were suffering from the same disease), low mentality and *arthritis deformans*.

MORPHOLOGY.

Mechanical Stresses in Bone Formation.

A. GLUCKSMANN (*The Journal of Anatomy*, April, 1942) has studied *in vitro* the effect of pressure and tension on cartilage and of tension on periosteum. He found that pressure and tension stresses exerted on cartilage *in vitro* cause the reorientation of the cartilage cells and lead to the disintegration of the hyaline ground substance and its replacement by a fibrillar system. Tension stresses promote bone formation in osteogenic tissue *in vitro* and determine the pattern of osseous architecture. Skeletal tissue cultivated *in vitro* responds directly to mechanical stresses.

Lymphatico-Venous Communications.

L. W. FREEMAN (*Anatomical Record*, April, 1942) gives an account of lymphatico-venous anastomoses. These had previously been described in man, monkeys and rats, and this present account concerns their occurrence in the dog, an animal commonly used in physiological laboratories. The author describes five groups of cases: (i) thoracic ducts which enter the venous angle on the left side without first branching; (ii) thoracic ducts which branch before entering the venous angle on the left side; (iii) thoracic ducts which send branches to the right side; (iv) thoracic ducts which anastomose with the azygos vein or with branches of it; (v) thoracic ducts which have right-sided branches and anastomoses with the azygos vein.

Variations in Origin of the Trapezius Muscle.

L. E. BRATON AND B. J. ANDERSON (*Anatomical Record*, May, 1942) have studied the trapezius muscle in eighty dissecting room cadavera and found many departures from the text-book description. They state that variations found in this study make it probable that grave defects of the trapezius are merely rarer members of a progression from muscles longer than usual to complete lack. Such a sequence would include: muscles reaching the lumbar region; "normals"; muscles corresponding to our least extensive specimens; those of still shorter span; mere slips; and finally exceptional instances of absence. It may be pointed out that the most superior and most inferior origins are expansions occurring late in embryonic life, just as they are more recent in the primate line.

Method of Measuring Skull Growth.

N. GIBLIN AND A. ALLEY (*Anatomical Record*, July, 1942) describe a method of measuring suture growth by inlays of bone wax on the surface of the skull. Accretion of bone on the external surface and resorption on the cerebral surface are also demonstrated by this method.

Os Epipyramis or Epitriquetrum.

R. L. SAUNDERS (*Anatomical Record*, September, 1942) describes a bilateral *os epitriquetrum*, composed of cartilage with a core of cancellous bone, and found in the cadaver of a male Swedish labourer, aged seventy years. Wedged in between the triquetrum, lunate, hamate and capitate, the accessory ossicles were attached to the palmar carpal ligaments; the left, larger bone had a maximum antero-posterior length of six millimetres. Discussion of ætiology led the author to favour a congenital origin.

Coccygeal and Carotid Bodies.

W. H. HOLLINSHEAD (*Anatomical Record*, September, 1942) investigated the supposed similarities between the carotid body and the *glomus coccygeum*. These bodies were formerly regarded as members of the chromaffin (paraganglionic) system. Later the non-paraganglionic nature of the *glomus coccygeum* was demonstrated and more recently the carotid body has been shown to be a chemo-receptor and thus also apparently removed from the chromaffin group. The present observations indicate that the *glomus coccygeum* and the carotid body differ sharply from each other in regard to cellular and vascular arrangement, innervation and cytology, and it is therefore concluded that they are not identical organs. Also the present gives no support to the view that the *glomus coccygeum* may be a chemo-receptor.

The Regenerative Capacity of Anterior Nerve Roots after Avulsion from the Cord.

SARAH S. TOWER (*Archives of Neurology and Psychiatry*, January, 1943) avulsed ventral spinal nerve roots from the cord of four cats and the animals were killed after periods of from four weeks to one year. Evidence of regeneration was sought during life and found in the longest surviving animal. Reinnervation of the denervated skeletal muscle was demonstrated histologically in the two longest surviving animals. Evidence of vigorous regeneration on the part of the ventral root fibres was observed grossly at autopsy or on microscopic examination in all the animals, beginning deep in the rootlet tracts of the cord. The cells of the cord were variously affected, many being destroyed completely, others surviving. The assumption that ventral nerve roots cannot regenerate if avulsed from the cord is, therefore, obviously unfounded as a generality. The evidence invites reconsideration of the potential regenerative capacity of the ventral spinal roots after similar damage in man.

Functional Representation in the Oculo-Motor and Trochlear Nuclei.

M. B. BENDER AND E. A. WEINSTEIN (*Archives of Neurology and Psychiatry*, January, 1943) made electrical stimulations and lesions in the oculo-motor and trochlear nuclei of monkeys, and their experiments indicate that individual ocular muscles are functionally represented within the ipsilateral oculomotor nucleus, while the superior oblique muscle is governed by the contralateral trochlear nucleus. The dorso-ventral and rostro-caudal arrangement of functional representation of the ocular muscles is as follows: (*a*) sphincter pupillæ, (*b*) inferior rectus, (*c*) ciliary (?), (*d*) inferior oblique (?), (*e*) internal rectus, (*f*) superior rectus, (*g*) *levator palpebrarum*, (*h*) superior oblique (contralateral).

The Relation of Androgens to Baldness.

J. B. HAMILTON (*American Journal of Anatomy*, November, 1942) gives an account of an investigation of 104 eunuchs and eunuchoids in which an attempt was made to associate the function of the testes with the status of head hair and also to study the changes that occur when such patients receive male hormone substance. In addition, an attempt was made to correlate the endocrine with the genetic factors involved in the induction of baldness in these men. His results indicate that androgens are the usual incitants of common baldness, but are considered for the present as one member of a family of indirect causes that induce baldness in those special areas of the scalp susceptible to alopecia. The role of other factors, especially a genetic predisposition to baldness, is emphasized by the occurrence of alopecia upon androgenic therapy in only those men with a familial tendency to baldness, and by the fact that no alopecia appeared upon intensive androgenic treatment of eunuchs whose pedigrees indicated no predisposition to baldness. Inherited susceptibility results in the development of common baldness if the gonads differentiate as testes, since in the usual course of events these glands provide androgenic secretions, incitants of baldness.

Post-Natal Changes in Ventricles of the Human Heart.

J. A. KEEN (*The Journal of Anatomy*, October, 1942) describes dissections to show the *foramen ovale* in the hearts of full-term fœtuses and newborn infants. The anatomical evidence strongly supports the view that the two caval currents remain unmixed. Attention is drawn to certain differential growth changes which take place in the ventricles as a result of the changed circulation after birth.

British Medical Association News.

MEDICO-POLITICAL.

A MEETING of the Victorian Branch of the British Medical Association was held on March 3, 1943, at the hall of the Royal Australasian College of Surgeons, DR. J. A. CAHILL, the President, in the chair.

The Future of Medical Practice.

The meeting took the form of a discussion of the future of medical practice in Victoria.

DR. J. A. CAHILL opened the discussion by deploring that a subject of such vital importance, requiring cool, calm and collected deliberation, was thrust upon the members of the medical profession at a time when, owing to the absence of so many medical men on service, they were expending every ounce of energy to cope with the medical needs of the civil population, at a time also when all their efforts should be devoted to helping the country and the Empire to which they belonged in the struggle for existence, to say nothing of the anxiety of mind experienced by them all regarding the safety of relatives and friends with the fighting forces and in the hands of the enemy as prisoners of war. He said that those who had perused THE MEDICAL JOURNAL OF AUSTRALIA of December 20, 1941, had seen an "Outline of a Possible Scheme for a Salaried Medical Service" which had been adopted by the National Health and Medical Research Council. The report was adopted by that Council at its twelfth session held at Canberra on November 26 and 27, 1941. Dr. Cahill read the text of the address by the Minister for Health (the Honourable E. J. Holloway) given at the opening of the session, and he also enumerated the names of the members of the National Health and Medical Research Council along with an indication concerning their representation of the Commonwealth itself and of its constituent States, the two colleges of specialists, the combined universities with medical schools, the Federal Council of the British Medical Association and the two government appointees to represent lay-men and lay-women respectively. He commented on the fact that he understood that only two of the fifteen members were doctors in active practice, and mentioned that Dr. J. Newman Morris was the only member who had refused to sign the report. He said that it was not to be wondered that with a council so constituted the practical details of the scheme should bear evidence of having been drawn up by persons unfamiliar with the requirements and achievements of up-to-date private practice. Further, many details, which had to be known beforehand to allow of thorough consideration of the scheme, were missing. He added that it should also be remembered that they had no knowledge of the conditions which were likely to prevail after the war, and to which any scheme proposed must be sufficiently flexible to be applicable.

Dr. Cahill went on to say that from the speech of the Minister of Health it was evident that it was his idea to have a national salaried medical profession and to socialize the medical profession. Dr. Cahill was convinced, however, that neither the people of Australia nor the great majority of the members of the medical profession desired to have a medical service regimented as units in a bureaucratic system. It seemed likely that in a whole-time medical service for the civil population the administration would be too rigid, advancement too dependent on seniority (to say nothing of the possibility of political and outside influences) and its day-to-day work lacking a spur to ambition. Ambition stimulated a man to do his best and consorted well with the desire and endeavour to help others. Individualism would not flourish easily within the rigid boundaries of a State service. It needed a freer atmosphere—it needed freedom.

Dr. Cahill announced that, at the request of the Federal Council of the British Medical Association in Australia, the Victorian Branch Council had commented on and criticized the scheme of the National Health and Medical Research Council and also the scheme which had been submitted by a subcommittee of the Branch Council, but had not been adopted by the Council. He did not enter into the details of that criticism, as most of it had been conveyed to members within a few days in a newsletter, and he knew that it was the intention of Dr. Roseby, the Chairman of the Organization Committee of the Council, to say something regarding it later in the discussion. Dr. Roseby also intended to give them an idea of how it was believed the present system could be improved and made available to all persons in the community. Dr. Roseby would also tell them of the convention that he had attended with Dr. Cahill in Sydney on February 5 and 6, and how the delegates at that convention had most emphatically declared "that a whole-time salaried basis for a nation-wide medical service was not in the best interests of the community". Dr. Cahill added that at the annual meeting of the British Medical Association, held in London on September 8 and 9, 1942, a proposal for the establishment of a whole-time salaried government medical service had been rejected by 177 votes to 20. He then announced that it was intended that a convention should be held soon in Melbourne, and that Dr. Roseby would give particulars concerning its organization, personnel and objects, and say something of other schemes that had been propounded, including the New Zealand scheme.

Dr. Cahill said that in THE MEDICAL JOURNAL OF AUSTRALIA some months earlier the question had been asked: "Must there be a revolution in medical practice?" To that there could be but one answer, and that the negative one. Any change in the present system must be viewed in the light of how it was going to benefit the community and be based on foresight and well-considered judgement of the members of the practising profession. The only sound method of change was by evolution, not by revolution. They were living at a time when they must be united. It was the bounden duty of each member of the profession not to accept any position under a scheme which did not have the approval of the Federal Council; further, they must steadfastly refuse to allow the implementation in part or in whole of any scheme materially altering the present method of practice until such time as the members of the profession serving with the forces, and especially those unfortunate individuals in the hands of enemies, had returned to their homes and had had ample opportunity to study and assess their future prospects in the profession and in a world that might be profoundly altered.

He said there was another matter to which he should refer and which, if allowed to persist, must inevitably have an effect on the medical profession. The Government had limited the number of students entering upon the medical course to such an extent that in time those qualifying at the final examinations would barely suffice to replace those lost by death or retirement in normal times. The new method of selection of students, in his opinion, left much to be desired. Had it been in existence for some years, it would have deprived the profession of many of its prominent members.

At the conclusion of his address Dr. Cahill asked the members to take more interest in the general affairs of the world, to realize the drift towards socialization, to appreciate and guard jealously their priceless heritage of freedom, and to be careful that they were not being led straight into the arms of autocracy. In themselves wartime powers should not cause alarm; but the blithe assumption on the part of many academic and bureaucratic reformers that economic control over the individual was to be a permanent governmental power was most alarming. Eternal vigilance was the price of freedom.

Though no obstruction should be placed in the path of victory, an alert people should check every political move, every law, and through their chosen representatives, should make certain that the martial economic law which was cheerfully accepted during the war did not become the permanent law of the land.

DR. DAVID ROSEBY, the senior Vice-President, said that the appointment of the Parliamentary Joint Committee on Social Security and the evidence that that committee was taking in the several States had intensified the interest of the Branch Council in the report of the National Health and Medical Research Council. As the President had stated, the Victorian Branch Council had criticized and commented on that report and on the one that had been published in THE MEDICAL JOURNAL OF AUSTRALIA as emanating from a subcommittee of the Victorian Council; both reports dealt with the subject of a salaried medical service. A summary of the considered attitude of the members of the Branch Council had been circulated to members as Newsletter Number 1.

Dr. Roseby went on to say that the views of some individual members of the Branch, in the early stages of thought, were in favour of the idea of a salaried medical service. Such views were expressed as "This will suit me: senior practitioner at £1,600 a year; hours of work reduced to 36½ as in the Repatriation Department; a pension in my retiring years; the promise of the report—no longer the burden of 24-hour accessibility; no patients at the private house; group practice; a local hospital; regular holidays for leisure and study; and—for the patient—the removal of both the financial burden in time of illness and the doctor's

alleged profit-motive in ill-health." He added that such arguments and illusions had proved the central theme of many a book such as those written by economists like Mr. and Mrs. Sidney Webb, Brend and Chiozza Money, and, also, papers since the time of the one contributed to the Australian Medical Congress, in 1889, by Dr. J. T. Mitchell including those of Professor Sir H. B. Allen and Dr. J. Newman Morris, against a salaried service, and the recent one, in 1941, by Dr. A. E. Brown, of Colac, in favour of salaries.

Dr. Roseby then stated that the war, with its sense of insecurity and promises of a new order by statesmen and political party leaders, had made many people think that matters would be different after the war. The success of Russia in the field of battle and in its social services had turned their thoughts to a better world when swords would be beaten into ploughshares. On every hand, doctors could be heard to say that a salaried service must come and that things would be different after the war. They should note that Dr. J. Newman Morris, who had had recent experience of active medical practice and who represented the profession (as the nominee of the Federal Council of the British Medical Association), was the only member of the Research Council who had recorded a vote against the adoption of the report which had been published and was undergoing discussion and criticism. It was only fair to mention, however, that the Councils of the Royal Colleges of Surgeons and of Physicians had declared that they were prepared to leave medico-political problems to the Federal Council of the British Medical Association; they were educational bodies and were only interested parties on matters affecting their members and Fellows as specialists; their representatives on the National Health and Medical Research Council had not committed the Colleges in any way, but had signed the report as individuals—as it were, in the Pickwickian sense! At that stage, Dr. Roseby entered upon an account of the detailed criticism of the report of the National Health and Medical Research Council which had been drawn up by the Branch Council and had been circulated to the members. He commented that the report was voluminous and, as Dr. Guy Springthorpe had observed, it had to be examined closely as it carried "the appearance of specious accuracy or spurious veracity". He exhorted the members to study the newsletter, as its contents represented many weary days and hours of work performed by members of the Branch Council. He stressed particularly the extraordinary omission of the 59 hospitals of the Victorian Bush Nursing Association and, at least, forty private hospitals in towns mentioned in the report as those without hospitals and not in need of provision for midwifery patients. In the year ended on June 30, 1942, 2,379 confinements were conducted in the Bush Nursing hospitals, which employed over two hundred trained nurses; indeed, the Victorian Bush Nursing Association was the greatest employer of nurses in the whole State. Further, in those hospitals, 19,959 deliveries had been recorded between 1929 and 1942. The report was a curious one and did not bear the mark of the master craftsman—some 'prentice hand had fashioned it, and, in parts, an amateur, with promises that would not be fulfilled by the scheme as presented, had guided him who had designed it. Every critic had been scathing; the New South Wales Branch Council was especially destructive in its criticism and, following upon the resolution of the convention, had recommended to the Federal Council the rejection of the salaried medical service proposals. The Victorian Branch Council would also advise the members to adopt a similar course of action. The Council of the Victorian Branch had some constructive suggestions to offer for the improvement of private practice. Those suggestions had been epitomized in the newsletter sent to the members and had been passed on to the Federal Council with the criticisms of the proposals for a salaried service. It was premature to go further into details until the basic principles to be adopted by the Federal Council, after consideration of the comments from the several States, had been announced.

After mentioning a number of different ways in which it was possible to organize the profession, Dr. Roseby said that the local Council was examining with great interest a "fee for service" scheme which had been elaborated by one of its members, Dr. Charles Byrne, to whom was due the gratitude of them all. The claims made for the "fee for service" proposals were: (i) it did not interfere with freedom of choice of doctor; (ii) doctors could arrange group practices; (iii) doctors were not bound to anything beyond their ability to give service to patients; (iv) there would be no depreciation in the value of medical practices; (v) in contradistinction to plans to extend contract practice, medical officers demobilized from the Services would not be affected disadvantageously on return to civilian practice; (vi) the doctors would preserve their independence; (vii) all the suggested improvements in present practice were incorporated; (viii) a constructive principle was offered which might be acceptable in governmental circles; (ix) it eliminated the possibility of the wholesale extension of contract practice which might be decidedly worse for the community than outright nationalization of the medical profession; and (x) it offered a basis on which it was believed the great bulk of the medical profession would be united.

Dr. Roseby announced that, at an early date, a convention along the lines of that which had been held so successfully at Sydney would be arranged at Melbourne. The Federal Council would meet on March 15 and the following days and the Victorian Branch Council would implement whatever steps were advocated by that body in order to obtain the considered opinions of the profession. Members were asked to interest themselves in material on the subject which would reach them in the post or in THE MEDICAL JOURNAL OF AUSTRALIA; to attend local meetings for mutual help in understanding the issues at stake; and to instruct their representatives at the convention, at the Council meetings and at convocation in such a deliberate way that the majority opinions would be registered accurately. Dr. Roseby then showed the representative character of the proposed convention by enumerating the professional groupings who would be invited to send delegates to meet the subdivisional representatives and other members of the Branch Council. He also read the resolutions adopted by the convention in New South Wales to show the type of the agenda items and the trend of opinion in the neighbouring State. On receipt of the agenda, subdivisions or professional groups were invited to submit to the Medical Secretary the text of any amendments desired for consideration by the convention. It was imperative that every executive member should organize his group of members and they should attend meetings in large numbers to become well informed as medical politicians and influence their circles of lay friends and instruct their delegates so clearly that neither the Federal Council nor the Commonwealth Parliament could be misinformed. Otherwise irreparable damage might be done. The organization of the medical profession must be designed to give the best that the doctors could give and it must reach those who needed it most. It must be so devised that it would develop in accordance with the progress of medical science and it must remove the defects of present practice.

At Dr. Roseby's request, Dr. C. H. Dickson, the Medical Secretary, read the text of lengthy correspondence with officials in New Zealand in which was described the chaotic state of existent medical practice in that Dominion, ascribable largely to a want of frank and friendly collaboration between responsible members of the organized profession and of the governmental bodies.

Dr. Roseby said that each member of the Branch had a part to play in the construction of the next steps in the development of medical practice in Australia. It was a commonly held fallacy that politicians felt the pulse of their constituents and that the best ones were those who interpreted the voters' wishes before the voters became vocative. He believed that the politicians were holding out a carrot—an expensive vegetable—under the noses of their constituents, but that the latter would bite it only if the doctors let them remain in ignorance of its true nature. He affirmed that members of the medical profession could be a powerful force in politics—they had only to talk to each of their patients and within a month whole towns would tell the local members what to do and they would do it as dutiful representatives of their constituents; but, for once in their lives, the doctors must be sure that they were well informed on an important political subject before they undertook that form of exerting influence; they must decide what was best for their patients as individuals and as members of the great Commonwealth. The Federal Council was proceeding democratically, but democracy demanded that each individual must be educated and help to educate others—he must not leave it to be done by the other fellows. After further discussion and deliberation there would be a crystallization of medical opinion into a definite policy to which it was only right that they should adhere; they must stiffen their backs, sink any differences, and be active in supporting the Federal Council in its dealings with the Government. The position of respect that the profession held in the community had been reached only by the character and determination of the men who had to make the fateful decisions; they would be cowards if they adopted any lower standard than the traditional one. They had

their opportunity to prove themselves worthy of the past so that those who followed would not say scornfully: "Look what the profession did in 1943!" That night the first great step had been taken to call on every member of the Branch to do his part; the final outcome of the organization would be the lead that the Federal Council would be empowered to give to the Commonwealth Government in the confidence that it truly knew and was promoting the enlightened opinion of the majority of the members of the profession, including those who were temporarily enlisted in the medical services of the armed forces.

> Let no false Etruscan linger in his home
> When Porsena of Clusium is on the march to Rome.

Dr. H. G. Mitchell said that he had listened attentively to what had been said that night, but had not heard any good reason why any change should be made in the present system of practice. In order to test the feeling of the meeting he desired to move: "That the British Medical Association, Victorian Branch, considers that the present system of medical practice is satisfactory and does not desire any change in it."

Dr. Oxby Donald seconded the motion and said that any change would mean loss of freedom. He had spent three years under the Hospital Control Board in Tasmania and had found the Board very difficult to deal with.

Dr. Leo Doyle remarked that the sponsors of the motion should consider the repercussions; if those present at the meeting carried it, it would mean that the Branch was opposed to any change. He thought that such a blanketing motion was quite wrong.

Dr. E. M. Ettelson thought that a majority of those present might agree with the idea expressed in the motion, but not with the wording of it. He would support it if the mover and seconder would change the wording to read: "This meeting of members of the Victorian Branch of the British Medical Association is of the opinion that such improvements as are necessary in medical practice could best be provided through the present organization of the profession." He added that there was a rightful public demand for certain improvements such as that modern medical treatment should be equally available to all members of the community, especially that group midway between affluence and poverty. Dr. Roseby had given the meeting a summary of observed faults in the existing system and the Government was committed to provide some form of improved health service for the nation and some form would be decided upon. They must be prepared to lead the public and the Government to make changes, not on a political basis, but to be of real benefit to the health of the community. He also stated that members of the Branch Council were of the opinion that the changes indicated could best be implemented on the basis of improvement of the existing method of private practice—they must offer to guide the Government.

Dr. H. Boyd Graham asked for the withdrawal of the motion and that no further motions should be submitted at the meeting. He pointed out that the President could not be expected to accept Dr. Ettelson's improved version of the original motion as an amendment because it negatived the original. What Dr. Ettelson had said might confuse certain members who would support the motion in the belief that they were being helpful to the Council policy when actually the original motion, if carried, would stultify all that had been done and all that remained to be done. Surely the members realized that that night they were merely opening a campaign to spread information on which members could be expected to reach decisions. Many more opportunities would be available before the members as a Branch should attempt to define in formal resolutions either the major or the minor features of the future policy of the Branch. He took the opportunity, while he was speaking, to support and to endorse as consistent with his own views practically everything that had been said by previous speakers. He hoped that the motion would be withdrawn.

At the request of the President and with general consent the motion was withdrawn.

Dr. Gerald Doyle said that he wanted to hear the views of medical members of the armed forces; they, too, were in touch in their formations with representative members of many Australian families. He heartily congratulated the members of the Branch Council on the information which had been supplied at the meeting.

Dr. Sydney Crawcour said that as he had returned recently from service abroad he could throw a little light on the subject raised by Dr. Doyle. Unpleasantness brought about by interference in medical matters by non-medical colonels indicated what the profession could expect from lay controllers, ignorant of the circumstances and desirous of running the show. He had heard a brigadier stoutly maintaining that no medical officer should in the nature of things hold a command in the army. Dr. Crawcour was disappointed to find on his return that the old cry "We must prepare" was still going around. As soon as the official plans of the British Medical Association were ready, lobbying for the forthcoming election must be undertaken energetically; the doctors must be coached to give the candidates propaganda in the direction they wanted for the good of the people.

Dr. G. W. Patterson said that he wished to suggest that the "fee for service" figure should bear a fixed relationship to the "cost of living" index.

Dr. John Dale stated that the members of the Council had had Dr. Patterson's point in mind. The figures fixed should be governed by the statistician's index figure. Though he did not dispute that the Federal Council of the British Medical Association was instituted to deal with Federal bodies on medical matters affecting more than one State, there was a danger in agreeing to accept federation. It was a great danger to accept one medical plan for all Australia. He took it that the National Security Regulations would be invoked to implement the plan and to operate it for five years after the war finished, with more and more centralization of power, which was just what they were not fighting for. Democracy meant decentralization; perhaps the medical profession did not want to be organized on a federal basis. The Federal Government undoubtedly had the power to control finance, though, at present, it left a lot of it to the private banks; it did not follow that it had the monopoly of brains. In Dr. Dale's opinion the proper role for the Commonwealth Government was to make the money available and to decentralize the spending of it just as far as was possible.

Similarly it was most desirable to introduce changes in medical practice on a State basis according to plans worked out locally.

Dr. A. L. Kenny said that at the time when he was President he had warned the members of the Branch against nationalization. As he understood it, the Federal Government would bring down an act and provide money for a scheme, but not under National Security Regulations. They just had to face up to some alteration in the profession. The New Zealand muddle should be a lesson both to the Government and to the profession. Not a single scheme in any country in the world had been transferred to any other country and been a success; it had always been found necessary to modify it considerably. In the very essence of things they must have changes; it would be fatal to be stagnant. He had noted in the published accounts that numbers of those who had given evidence before the Parliamentary Joint Committee had indicated that there was not a British Medical Association scheme; the Association merely criticized. Every man must be made to feel that he must honestly and sincerely probe the matter and reach a decision after studying the subject thoroughly.

Dr. Paul Dane said that he was delighted to find himself in goodly company; his opinions were actually shared by those on the platform. There was a tendency in discussions to get too many details and to lose the broad general considerations. Dr. Roseby had given a lot of detail, but had not mentioned one broad principle—that the scheme of the National Health and Medical Research Council was stated to depend on the economic position of the people. Medical practice depended on the economic position and health of the people. It was one of the grandest of principles that everybody should be responsible for his own actions; under the present system that principle operated; government schemes usually led to a sloppy state of responsibility; while £40,000,000 was spent annually on drink, between 40% and 50% of invalid pensioners owed their invalidity directly or indirectly to "booze". Governmental changes were emphatically not inevitable: evolutionary changes were made. The profession should certainly educate itself; they were already socialized as members of the Emergency Medical Service; he had avoided having to join it. Most politicians were bags of wind and would collapse if one fought them. The members of the profession must not give up their rights which had been firmly established for a thousand years. Dr. Dane concluded by saying that all were under a deep sense of gratitude to the President, the Vice-Presidents and the members of the Branch Council. It was one of the best meetings he had ever attended.

Dr. C. H. Fitts said that it was not logical to discuss matters that might be regarded as irrelevant, but he had

come to the meeting profoundly disturbed by the existing state of private and public hospital practice. The motions adopted by the convention at Sydney had eased his mind considerably. He certainly could not subscribe to any idea that existing practice was satisfactory. Though "investigation" loomed large in the plans of politicians, the army attitude on indiscriminate investigation was a false one.

DR. G. R. WEIGALL said that he was very out of touch with the subject under discussion, but was glad to be on leave and to be present at the meeting. Dr. Doyle had got him to his feet to mention some views of those in the Services with whom he had been in contact; he had sounded some of his brother officers on their ideas for the future of the profession; they were from different States and not many of them were general practitioners. Those who had been in general practice were anxious to go back to something different and more closely approximating service conditions. They wanted fixed salaries without book-keeping and bad debts, regular instruction and regular leave; they did not look forward to 24-hour a day availability at the end of a telephone. Another agreeable feature of medical work in the army was the tendency to drop the work one could not do or did not like doing; it was a nice change to have it allotted to others on appropriate forms. Forms and clerical work had become familiar: it was no longer a novelty to fill in forms in triplicate. He believed they would rather place their "liberty" in the hands of an efficient board with adequate medical representation than in undefined and multitudinous and unorganized people at the other end of a telephone. They had come to regard the notion of free choice of doctor and patient as very troublesome and uneconomic in contrast with allotment of both doctors and patients indiscriminately. They did not think it was by any means a vital point; if they liked a patient and wanted to follow him up they could do so; if the patient was "a pain in the neck", they could disregard him and not display any interest in him; there was no need to waste time in arguments with patients; with some disciplinary powers there was no need to haggle with such people or to try to be nice to those they did not want to treat nicely. In any case Dr. Weigall had reached the conclusion that patients selected their doctors more for "charm" than ability, and if the standard of practice was maintained at a high level the freedom of choice was immaterial. Some disciplinary powers on both sides were to be desired. He had been struck forcibly by the tremendous amount of work which had been done by the Council and was glad that it was proposed to ascertain the views on the details held by the rank and file of members of the Branch and hoped that a parallel *questionnaire* would reach those in the Services.

DR. J. A. CAHILL said that as all would have ample opportunities to discuss the problems with each other, no useful purpose was to be served by prolonging the present discussion. Members should formulate their views and send their representatives along to the convention instructed sufficiently well to represent them correctly.

In conclusion, Dr. Roseby suggested that the yardstick to apply should be what the soldiers thought rather than what the medical officers thought; they would then get nearer the viewpoint that the Government would apply. What was best for the public was best for the medical profession. He had felt particularly inspired by the soundness of the advice of Dr. Kenny who had rendered yeoman service to the Branch and had ornamented every position on the Council. The constructive suggestions from New South Wales, Victoria and the other States would be stimulating to the Federal Councillors who would probably have to represent the profession in conference with other interested parties. He wanted the members to talk amongst their friends and spread the gospel, to get them to attend meetings, to see prominent people and as many voters as possible, and to be very active to ensure that the ultimate decisions would be wise ones. Rumours about doctors and what they said had the habit of spreading quickly and went far in the community. They should form views, accept views, and stick to the accepted views.

NOTICE.

THE following notice is published at the request of the Medical Secretary of the New South Wales Branch.

MOTOR VEHICLES (THIRD PARTY INSURANCE) ACT.

The attention of members is drawn to sections 25 and 26 of the *Motor Vehicles (Third Party Insurance) Act* of New South Wales.

Under section 25 (but subject to subsection 2 of the section) where the death of or bodily injury of any person is caused by or arises out of the use of a motor vehicle (not exempted from certain provisions of the Act) and where any payment is made (whether or not with an admission of liability) by the authorised insurer or in the case of an uninsured or unidentified motor vehicle by the nominal defendant in respect of such death or bodily injury, then, if such person received, in respect of any such injury, reasonably necessary medical treatment, by a legally qualified practitioner, there shall also be paid by the authorised insurer or nominal defendant to such practitioner such amount as is reasonably appropriate to the treatment afforded, having regard to the reasonable necessity therefor, and the customary charge made in the community for such treatment.

Subsection 2 (referred to above) states that the authorised insurer or nominal defendant shall not be bound to pay, unless notice is given in writing that a claim will be made under section 25 or section 26 of the Act, to:

(*a*) the authorised insurer as soon as practicable after the person entitled to make the claim became aware of the identity of the authorised insurer;

(*b*) to the nominal defendant as soon as practicable after the person entitled to make the claim became aware of the fact that the motor vehicle was an uninsured motor vehicle or that the identity of the motor vehicle could not be established.

In either case, the notice must not be later than thirty days after such person could with reasonable diligence have ascertained such identity or fact as the case may be.

Any amount payable under the above section by either the insurer or nominal defendant may be recovered as a debt from him by the medical practitioner.

Under section 26 of the Act (subject to subsection 2 of this section), where liability at law is incurred in respect of the death or bodily injury to any person caused by or arising out of the use of a motor vehicle (not exempted from certain provisions of the Act)—if such person received in respect of any such injury, reasonably necessary medical treatment by a legally qualified medical practitioner such practitioner may, in the name and on behalf of such person, and notwithstanding such person may be dead, recover such amount as is reasonably necessary therefor, and the customary charges made in the community for such treatment.

Any amount recoverable under the above may be recovered by way of damages from the owner, and the driver of the vehicle jointly or from either severally or (in the case of an uninsured or unidentified motor vehicle) from the nominal defendant.

Subsection (2) referred to above states that no action for the recovery of any amount shall be commenced unless notice is given in writing that a claim will be made. The conditions under which this notice is to be given are the same as in subsection (2) of section 25.

Further, no such action shall be commenced—

i. in any case where the authorised insurer or nominal defendant has made a payment (whether or not with an admission of liability).

ii. in any case where proceedings have been taken under the Workers' Compensation Act or for the recovery of damages unless and until such proceedings have been dismissed for want of prosecution or otherwise discontinued.

iii. in any other case until six months at least after the occurrence out of which death or bodily injury arose where any action has been commenced by the medical practitioner and before such action has been completed proceedings are commenced under the Workers' Compensation Act or for the recovery of damages, the action shall be stayed pending completion of the proceedings. If compensation is paid or payment made under section 25, the action shall abate.

Payment made by an authorised insurer or nominal defendant in settlement of any claim, or in satisfaction of any judgment, shall be made direct to the medical practitioner.

Note: Medical treatment does not include treatment which is rendered—

i. to a patient in an incorporated hospital or separate institution within the meaning of the Public Hospitals Act, unless such patient has been classified as a private or intermediate patient.

ii. to any patient in a hospital by a resident medical officer of such hospital.

Post-Graduate Work.

WEEK-END COURSE AT TAMWORTH.

THE New South Wales Post-Graduate Committee in Medicine announces that, in conjunction with the Northern District Medical Association and an Australian general hospital, it will hold a week-end course at the Small Town Hall, Tamworth, on Saturday, May 22, and Sunday, May 23, 1943. The programme is as follows:

Saturday, May 22, 1943.

11.30 a.m.—Registration. "Demonstration of Blood Films": Major E. F. L. Laurie.
12 noon.—"Nephritis": Lieutenant-Colonel W. Wilson Ingram.
2 p.m.—"Overweight: Causes, Medical Aspects and Treatment": Major Walter L. Winkenwerder, United States Army.
3 p.m.—"The Use of the New Antiseptic Zephiran": Major Paul A. Kunkel, United States Army.
3.30 p.m.—"Nasal Allergy": Major B. B. Blomfield.
4.15 p.m.—"The Management of Closed Head Injuries": Lieutenant-Colonel I. Douglas Miller.
5 p.m.—"Food Disabilities": Major Laurie MacDonald.
8 p.m.—"Dengue Fever": Lieutenant-Colonel W. Wilson Ingram.

Sunday, May 23, 1943.

9.30 a.m.—"Endocrines in Gynæcology": Captain S. B. Studdy.
10 a.m.—"The Diagnosis of Brain Tumours": Major Paul A. Kunkel.
11.15 a.m.—"Differential Diagnosis and Treatment of Asthma": Major Walter L. Winkenwerder.
12.15 p.m.—"Obstruction of the Large Bowel": Major J. S. MacMahon.

The fee for the course will be £1 1s. except for members of the Defence Forces who may attend the course without fee. Those intending to be present at the course are requested to notify Dr. E. B. Fitzpatrick, 448, Peel Street, Tamworth, as soon as possible.

National Emergency Measures.

NATIONAL SECURITY (ALIEN DOCTORS) REGULATIONS.

THE following is Addendum Number 1 to the list of alien doctors licensed by the Commonwealth Alien Doctors Board on March 1, 1943.

I. Licensed to practise medicine in all branches of medical science in such places as are directed by any State Medical Co-ordination Committee appointed under the National Security Act:

Date.	Licence No.	Name and Qualification.	Last Recorded Address.
1943 1 March	54	Loebel, Robert, M.D., Vienna, 1919	602 "Werrington", Macleay Street, Pott's Point, N.S.W.
1 March	55	Lucas, Otto Nathan, M.D., Marburg, 1923	Wiclarton Lodge, Bell Street, Watson's Bay, N.S.W.

V. Licensed to practise medicine at the Polyclinic of the Javanese Seamen's Home established by the Netherlands Indies Government Commission and the Royal Packet Navigation Company Limited, in Sydney, New South Wales, and also amongst the wives and families of personnel of the Royal Netherlands Army and Navy Forces in Sydney.

Date.	Licence No.	Name and Qualification.	Last Recorded Address.
1943 1 March	53*	van Leent, Johan Philip, M.D., Leyden, 1937	C.o. Royal Packet Navigation Co. Ltd., 255 George Street, Sydney, N.S.W.

* Cancelling Licence No. 44 issued on 10 July, 1942.

Books Received.

"Catechism Series: Surgery", Parts III, IV and V, Fifth Edition, revised and rewritten. Edinburgh: E. and S. Livingstone. 7¼" × 4¾", pp. 235. Price: 1s. 6d. net each part.

"The 1942 Year Book of Pediatrics", edited by Isaac A. Abt, D.Sc., M.D., with the collaboration of Arthur F. Abt, B.S., M.D.; 1943. Chicago: The Year Book Publishers, Incorporated. 7¼" × 4¾", pp. 512, with illustrations. Price: $3.00, post paid.

Diary for the Month.

APR. 20.—New South Wales Branch, B.M.A.: Ethics Committee.
APR. 21.—Western Australian Branch, B.M.A.: Branch.
APR. 22.—New South Wales Branch, B.M.A.: Clinical Meeting.
APR. 27.—New South Wales Branch, B.M.A.: Medical Politics Committee.
APR. 28.—Victorian Branch, B.M.A.: Council.
APR. 29.—New South Wales Branch, B.M.A.: Branch.
APR. 29.—South Australian Branch, B.M.A.: Branch.
APR. 30.—Queensland Branch, B.M.A.: Council.
MAY 4.—New South Wales Branch, B.M.A.: Organization and Science Committee.
MAY 5.—Victorian Branch, B.M.A.: Branch.
MAY 5.—Western Australian Branch, B.M.A.: Council.
MAY 6.—South Australian Branch, B.M.A.: Council.
MAY 7.—Queensland Branch, B.M.A.: Branch.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Honorary Secretary, 135, Macquarie Street, Sydney): Australian Natives' Association; Ashfield and District United Friendly Societies' Dispensary; Balmain United Friendly Societies' Dispensary; Leichhardt and Petersham United Friendly Societies' Dispensary; Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney; North Sydney Friendly Societies' Dispensary Limited; People's Prudential Assurance Company Limited; Phœnix Mutual Provident Society.

Victorian Branch (Honorary Secretary, Medical Society Hall, East Melbourne): Associated Medical Services Limited; all Institutes or Medical Dispensaries; Australian Prudential Association, Proprietary, Limited; Federated Mutual Medical Benefit Society; Mutual National Provident Club; National Provident Association; Hospital or other appointments outside Victoria.

Queensland Branch (Honorary Secretary, B.M.A. House, 225, Wickham Terrace, Brisbane, B.17): Brisbane Associated Friendly Societies' Medical Institute; Bundaberg Medical Institute. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL or position outside Australia are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.

South Australian Branch (Honorary Secretary, 178, North Terrace, Adelaide): All Lodge appointments in South Australia; all Contract Practice appointments in South Australia.

Western Australian Branch (Honorary Secretary, 205, Saint George's Terrace, Perth): Wiluna Hospital; all Contract Practice appointments in Western Australia.

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